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Virus TI User Manual

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Table Of Contents

Introduction

WELCOME 8
THE VARIOUS CHAPTERS 8
SAFETY PRECAUTIONS 9
MAINTENANCE 9
THE REAR PANEL 10
ROTATING THE SOCKETS 11
SETTING UP 11
SWITCHING ON AND OFF 12
SELECTING PROGRAMS 12
ABOUT THE MENUS 13
DIFFERENT WAYS OF WORKING 14
ABOUT USB CONNECTION 16
CREATING NEW SOUNDS 17
ABOUT POLYPHONY 17

First Steps

CHEESE FOR STARTERS? 20
THE AMPLIFIER ENVELOPE SECTION 21
THE FILTERS SECTION 24
THE FILTER ENVELOPE SECTION 29
THE OSCILLATORS SECTION 30
THE MIX SECTION 35
THE MODULATORS SECTION 37
THE MATRIX SECTION 39
THE ARP SECTION 40
THE EFFECTS SECTION 41
THE MASTER SECTION 44
HYPERSAW AND WAVETABLE 47

VirusControl

INTRODUCTION 50

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COMPATIBILITY 52
STARTING UP 53
LOADING VIRUSCONTROL 55
EASY PAGE 57
BROWSER PAGE 58
OSC PAGE 63
FILTER PAGE 65
LFO PAGE 67
MATRIX PAGE 68
ARP PAGE 69
FX PAGE 70
COMMON PAGE 71
REMOTE PAGE 72
GENERAL HINTS AND TIPS 74

Sound Parameters Reference

ARP 76
ARPEGGIATOR 76
MATRIX 79
SLOT 79
MODULATORS 81
LFO 1 82
LFO 2 84
LFO 3 84
LFO 1 DESTINATIONS 84
LFO 2 DESTINATIONS 86
LFO 3 DESTINATION 87
EFFECTS (UPPER ROW) 89
DELAY 90
REVERB 91
LOW EQ 93
MID EQ 94
HIGH EQ 94
EFFECTS (LOWER ROW) 95
DISTORTION 95
ANALOG BOOST 96
CHORUS 97
PHASER 98
VOCODER 100
VOCODER TABLE 104
INPUT FOLLOWER 105
INPUT RING MODULATOR 106
OSCILLATORS 107
OSCILLATOR 1 – CLASSIC 110
OSCILLATOR 1 – HYPERSAW 112
OSCILLATOR 1 – WAVETABLE 114
OSCILLATOR 2 – CLASSIC 115
OSCILLATOR 2 – HYPERSAW 117
OSCILLATOR 2 – WAVETABLE 118
OSCILLATOR 3 120

www.americanmusical.com

COMMON 121
SUB OSCILLATOR 123
NOISE 124
RING MODULATOR 124

MASTER 125
COMMON 128
UNISON 131
VELOCITY MAP 132
INPUTS 133
SURROUND 134
CATEGORIES 134
SOFT KNOB 135

STORE 136
STORE 136

MIX 137

FILTERS 139
SATURATION 140
FILTER-1 141
FILTER-2 143
COMMON 144
FILTER ENVELOPE 145
AMP ENVELOPE 146

FILTER ENVELOPE 148

AMPLIFIER ENVELOPE 149

Configuration Reference

RANDOM PG 152
MIDI 152
MIDI DUMP RX 154
MIDI DUMP TX 154
KEYBOARD 155
MIDI CONTROL 157
INPUTS 158
AUDIO CLOCK 159
SOFT KNOB (GLOBAL SETTINGS) 159
KNOB BEHAVIOUR 160
GLOBAL TUNING 160
SYSTEM 161

Multi Mode Reference

PATCH 166

Appendix A - Legal Declarations

COMPLIANCE 172

DECLARATION OF CONFORMITY 174

WARRANTY REGULATIONS 175

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Appendix B - Glossary

GLOSSARY 178

Appendix - Patch Names

ROM-A 192

Index

INDEX OF FUNCTIONS ETC. 210

1: Introduction

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Welcome

Dear Virus owner

Congratulations on choosing the new Virus TI, the latest generation in a deliberate process of evolution that has kept the Virus name at the forefront of synthesizer technology for many years. TI stands for Total Integration, meaning that the hardware can be fully integrated into a PC or Mac-based studio via the VirusControl™ plug-in (VSTi or Apple Audio Unit).

Before switching your Virus TI on, please read this chapter thoroughly!

The Various Chapters

This manual is structured as follows:

> **Introduction:** What you are reading now. Fundamental information you should know before trying out your Virus.

> **First Steps:** A practical guide for beginners, intermediates and experts alike. The best starting point before delving into the reference chapters.

> **Sound Parameters Reference:** The main body of this manual. Every parameter concerning sound generation and treatment is listed here, with brief explanations and cross-references.

> **Configuration Reference:** All global settings – parameters used to adapt the Virus to suit your way of working.

> **Multi Mode Reference:** A list of the Multi Mode parameters, with brief explanations.

> **VirusControl:** Introduction to the VirusControl application.

> **Appendices:** Legal matters, charts, diagrams, glossary.

> **Index:** Where to look when you are not sure where to look!

Safety Precautions

*Please read the following carefully. Some of this advice concerns **your** health as well as that of your instrument!*

- Avoid exposing your Virus to moisture, dust or dirt. Do not place open liquids (e.g. coffee cups) anywhere near the unit. If any substances get into the Virus housing, you should switch it off, disconnect the power supply and contact a qualified service techician.
- Avoid exposing the unit to excessive heat or direct sunlight. Especially when rack-mounting your Virus (desktop version), please ensure that relatively cool air can circulate freely around the unit.
- Avoid exposing the unit to physical shock or vibrations. Make sure it is placed firmly on a flat surface or properly secured in a rack.
- If your Virus model requires a 12V DC external power supply, only use the one that was included with the unit. Never connect the Virus to a power outlet that does not fully comply with national safety regulations. Never use an external power supply which wasn't designed to match the local voltage requirements.
- Disconnect the power whenever you are unlikely to use the Virus for a long period of time. Always pull on the plug itself, not on the cord. Never touch the mains plug with wet hands.
- The Virus is capable of generating levels that can cause irreversible damage to your ears, either via an external amplifier or when using headphones connected directly to the unit. Please keep levels reasonable at all times! Make sure that the equipment you connect the Virus TI to matches the Virus' requiremtents (+4dB Outputs etc.)

Maintenance

Updating the OS

Access Music is famous for improving their products via free updates to the operating system. We recommend that you visit **www.access-music.de** regularly and download the latest OS.

Cleaning

Only use a soft, dry cloth or soft brush to clean the panel – do not apply any liquids. Note that industrial or household solvents can cause severe damage to surfaces.

Repair

Never open the Virus yourself – there are no user-servicable parts inside. If your Virus ever needs repairing, please contact a qualified service technician.

Replacing the Battery

To prevent your sounds from being lost whenever you switch off the power, there is a battery inside your Virus. This may need replacing after 4 or 5 years by a qualified service technician. Remember to backup your data beforehand!

Disposal

Disposal of old Electronical & Electronic equipment (Applicable throughout the European Union and other European countries with seperate collection program).

The marking shown on the product indicates that it should not be disposed with other household waste. Please take your Virus TI to an applicable collection point for recycling of electronical and electronic items.

For further questions on an ecological friendly disposal of this product, please contact your Access dealer respectively your local government office.

The Rear Panel

Sockets

> **USB:** Audio and MIDI communication with computers.

> **MIDI IN / OUT / THRU:** The usual trio

> **S/PDIF:** Digital audio I/O

> **INPUT:** Audio input jacks

> **OUTPUT 1:** Main audio output jacks

> **OUTPUT 2 / 3:** Additional audio output jacks

> **12V DC IN (desktop model):** Power supply input socket.

> **HEADPHONES:** Stereo audio output jack.

Rotating the sockets

The sockets on the rear panel of the Virus TI desktop model can be rotated 90° so that the unit can be mounted in a 19" rack without requiring free space above the "back" panel. Many owners will consider themselves skilled enough to attempt the following themselves – although this should ideally be done by a professional technician. We recommend to contact your Access dealer for further assistance.

Important notice: Kemper Digital GmbH takes no responsibility whatsoever for any damage incurred while attempting to carry out these instructions! Rotating the sockets does not void the warranty of a Virus TI Desktop.

- What you will need: A flat and soft working surface (e.g. your couch), a bowl or similar for the screws, a suitable crosspoint screwdriver and hexagonal key.
- Remove any attached cables and turn the unit upside down. Remove the end-cheeks using the hexagonal key.
- Using a small cross-point screwdriver, remove the 6 screws in the baseplate. Carefully remove the baseplate and set it aside for the moment. Remove the 6 screws between the rear-panel sockets.
- Pull up the "sockets unit" a little and perch it on the ledge of the back panel. Using both hands, **carefully** pull the 40-way connector from its socket on the motherboard. The sockets unit is now free.
- Using the latest set of screws (i.e. the ones without pointed ends), attach the sockets unit firmly into the baseplate, which has all the necessary holes.
- Position the baseplate (with the sockets now firmly in place) so that the 40-way cable can reach the socket on the motherboard. Carefully but firmly plug it all the way in.
- "Close the lid" and use the remaining 6 small screws to reattach the baseplate. Turn the unit "right side up" and attach the power cable to ensure that the 40-way plug has been properly fitted.

Setting Up

The following steps include several important precautions. In addition to the simple setup described here, the Virus TI can be connected in a variety of ways to suit virtually any audio environment.

- Please do not plug the Virus into the mains power yet. First of all, temporarily switch off any devices you will eventually be connecting your Virus to, and turn all main volume controls (mixer, amplifier) down to minimum.
- If your Virus is a desktop version, connect the MIDI OUT from a keyboard or sequencer to the MIDI IN socket on the Virus.

- Connect both the OUTPUT 1 sockets (standard mono jacks) to two line inputs on your stereo amplifier or audio mixer. Make sure to only use qualified amplifiers. Check back with your local Access dealer for further details. When using two separate mixer channels, pan them to the extreme left and right respectively. If you prefer to use headphones, use the HEADPHONES socket on the rear panel.
- Connect your Virus to the mains power. Press both TRANSPOSE buttons at the same time to “wake up” the Virus. Switch the rest of your equipment on in the following order: the MIDI send device (keyboard or sequencer etc.), then the mixer and finally the amplifier.
- Set up the MIDI send device (keyboard or sequencer) so that it sends on MIDI channel 1 (for now).
- Turn up the MASTER VOLUME on your Virus to maximum and, while playing some notes, adjust the volume controls on your mixer/amplifier to a reasonable listening level. If you are using a mixer, you might find some useful advice on setting optimum levels in the mixer´s own documentation.

Switching On and Off

Virus TI models do not have a physical on/off switch. To put the unit into standby mode, press and hold both TRANSPOSE buttons until the countdown reaches zero. Press the same buttons to “wake up” the Virus again.

Selecting Programs

Your Virus TI has 20 banks of memory (RAM-A to RAM-D, ROM-A to ROM-P), each containing 128 SINGLE programs numbered from 0 to 127. A total of 2560 sounds...

To try out some sounds, make sure you are in SINGLE mode and that no menu is open – you might have to press the SINGLE button (in the Master section to the right of the display) first. There are three basic methods of selection:

Sequentially

The most obvious way to select programs is by stepping through them using the BANK and PROGRAM buttons to the right of the display. When any menu is open, these buttons are used for PARAMETERS and VALUE instead – see “About the Menus” below. To scroll automatically, hold one of them down for a while.

A quick method of reaching any program within the current Bank: Hold down SHIFT and turn the VALUE 3 knob.

By Category

Because there are so many sounds to choose from, programs can be assigned one or two so-called “Categories”. This information is stored within each program. A practical demonstration:

Press the SEARCH button to the left of the display and use the VALUE 1 knob to change the category to “Drums”. Then use the VALUE +/- buttons to browse through programs – in the bar at the top of the screen you will see programs that are in the “Drums” category only. When you have found a suitable program, press the ⇖EXIT button.

Via MIDI

All MIDI sequencers and professional MIDI keyboards are capable of transmitting Bank and Program change messages via MIDI.

About the Menus

How to open menus

The main menus are opened via the EDIT buttons you will find in most of the sections. The usual method is to SELECT an element first (e.g. LFO1, OSC 2 or REVERB) then press the EDIT button in that same section.

All buttons in the MATRIX section as well as CONFIG in the Master section also open menus.

How to make full use of Edit Buttons

If pressed repeatedly, the EDIT buttons in the FILTERS and MASTER sections will step through the menu pages. Those in the OSCILLATORS and lower EFFECTS sections toggle between the selectable (element-specific) pages and additional, non-selectable parameters e.g. the Vocoder. Similarly, the one in the MODULATORS section toggles between the selected LFO’s main settings and its Destinations menu.

How to navigate within menus

Many menus in your Virus require more than one page. These can be found by using the PARAMETERS buttons (in the Master section, to the right of the display).

If a menu is already open, selecting a different element within the same section (e.g. LFO3 instead of LFO1, OSC1 instead of OSC2 or LOW EQ instead of REVERB) will jump to the new menu.

How to change values within menus

Use the VALUE knobs below the display. Whenever you enter a menu page, one of the parameters will already be active (indicated by a triangular cursor). Its value can be decremented/incremented via the VALUE buttons. To move the cursor without changing values, hold down SHIFT and press one of the PARAMETERS buttons.

There is actually a system parameter which governs how the PARAMETERS buttons work – see “Navigation” on page 163.

How to close menus

To exit any menu, press the ⇖EXIT button to the left of the display. It is not necessary to press ⇖EXIT before opening a new menu. Re-selecting the current basic mode (SINGLE, MULTI) will also exit menus.

Different Ways of Working

Single mode

This is the standard mode for playing just one sound at a time. The next chapter is a simple but detailed tutorial to help you become familiar with Single mode operation.

Multi mode

Your Virus can play 16 different sounds at the same time: MULTI programs contain 16 PARTS, each equivalent to a SINGLE program plus a few additional parameters such as MIDI channel, fine tuning, key range etc..

Unlike earlier Virus models and many other synthesizers, MULTI programs in the Virus TI do not simply reference individual sounds, but actually **contain** the data, including all effects. Multi mode is therefore predestined for more complex programs.

Whenever the Bank or Patch parameters (see “Patch” on page 166) are changed, the corresponding Single program is copied into the current Part of the Multi program. For details about Multi mode parameters, see the “Multi Mode Reference” on page 165.

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Sequencer mode

Whereas Multi mode offers maximum flexibility for layering sounds, defining keyboard splits etc., Sequencer Mode is usually the better choice for multitrack MIDI sequencing purposes.

Press the MULTI and SINGLE buttons at the same time (or start the VirusControl application – see below). Sequencer Mode accesses an area of memory containing 16 Single programs. It couldn't be simpler: the MIDI channel is always the same as the PART number (1 to 16).

Remote mode

The Virus TI can be used as a MIDI controller i.e. the controls can be configured to suit a variety of MIDI devices. There are several Remote setups suitable for popular devices already included in your unit. Remote mode is accessed by holding down SHIFT and pressing the CONFIG button to the left of the display. User-defined remote setups can be created using VirusControl...

VirusControl

The VirusControl application (for PC or Mac) makes the Virus TI appear to be a multi-channel VST/AU soft-synth within any suitable host program e.g. Logic, Cubase etc.. Virus TI is the world's first hardware synthesizer featuring sample-accurate timing and delay-compensated audio/MIDI. See "VirusControl" on page 145 for details on setting up, compatibility and how to work with this revolutionary feature.

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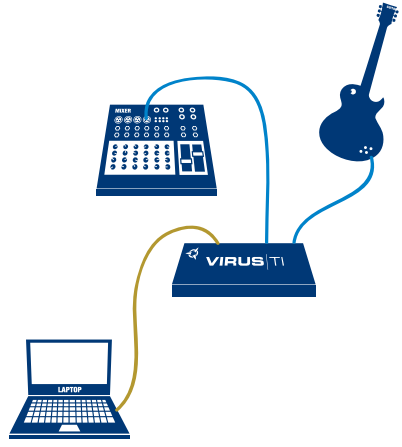
About USB Connection

Don’t use a hub! To achieve the level of performance and integration the Virus TI series provides, you must reserve a USB slot exclusively for the Virus TI i.e. this specific port should not be shared with any other USB device. During beta-testing with various PC and Mac setups, we found that using certain USB hubs not only slowed down the connection speed but often made the entire connection unreliable. For this reason, we eventually decided not to support the use of USB hubs at all.

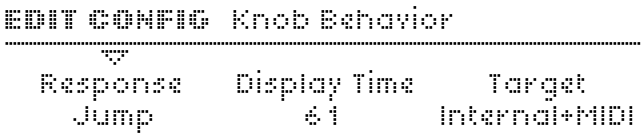
Note: Virus Control constantly checks the MIDI and AUDIO connections and displays an alert message if it sees any problems.

A Typical Setup



Changing knob response

A global parameter (see “Response” on page 160) affects how most of the knobs on your Virus react, and the current value of this parameter may not suit your needs...



Press the CONFIG button to the left of the display and use the PARAMETERS buttons to scroll through the pages until you reach the one shown above. Using the VALUE 1 knob, change Response to “Jump” if this is not already selected. Press the ⇖EXIT button to return to normal operation. Later on, you may prefer one of the other options (Snap or Rel) to prevent glitches during live performance.

Note that some knobs will have no audible effect because they depend on other parameters e.g. the RATE of an LFO that isn’t being used, or the DECAY of an envelope when SUSTAIN is at maximum etc..

Creating New Sounds

The INIT Programs

The end of bank ROM-A has been reserved for a few simple templates, which you can use whenever you want to create sounds “from scratch”. For instance, the instructions in the next chapter will often ask you to select one of those.

About Polyphony

The average number of voices the TI series (with its two DSPs) can deliver is quoted at about 80, with a maximum of more than 100. However, to reach such giddy heights, the TI makes very dynamic use of resources i.e. using certain features can lower polyphony to well below these figures. For instance, doubling the number of Unison voices e.g. from 3 to 6 will reduce polyphony by half.

If you ever find you need to maximize polyphony (e.g. in Multi mode), try minimizing your use of the following “prime suspects” first: Unison mode, Reverb, Analog Filter models and Oscillator 3.

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2: First Steps

This hands-on tutorial introduces every physical control on the panel, as well as a few important parameters in the menus.

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Cheese for Starters?

If your Virus TI is a desktop model, you should have a MIDI keyboard connected...

The most effective way of getting to know your Virus is by performing very simple exercises “hands-on”, and that’s why many of the sounds you will be asked to make are cheesy to say the least! Despite the risk of compromising your aesthetic sensibilities or overstating the obvious, I hope you will appreciate the advantages of this method.

Throughout this chapter you will often be asked to “Restore ROM-A126” or “Restore ROM-A127”. To do this, press the ↖EXIT button (closes any open menu), then use the VALUE buttons to step to the neighbouring program then back again.

Make sure you are in SINGLE mode, then select program ROM-A127 (i.e. Bank ROM-A, program number 127). Play a note on your keyboard. Like an organ, the sound starts abruptly, sustains as long as you hold down the key, then stops abruptly. Unlike an organ, you can change this behaviour by adjusting a few “envelope” parameters...

The Amplifier Envelope Section

The four knobs at the bottom right of the panel control the amplifier envelope i.e. how volume changes during and immediately after each note you play:

> **ATTACK:** How long it takes for the level to go from silence to maximum.

> **DECAY:** How long it takes from maximum to the SUSTAIN level...

> **SUSTAIN:** The level of sustained notes immediately after DECAY.

> **RELEASE:** How long it takes to fade out after notes are released.

Here are a few practical experiments for novices.

ATTACK

Turn the ATTACK knob down to minimum to reach the value already stored in ROM-A127 (which is 0). Now turn it up slowly while repeatedly playing notes on your keyboard – you will hear the start of each note becoming progressively slower. Leave ATTACK at around 40 for now.

DECAY

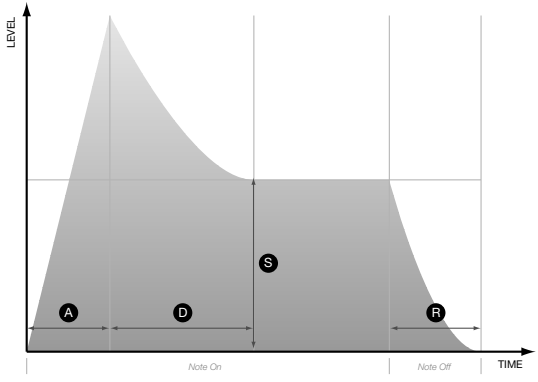
Turn the DECAY knob up to maximum. The original value was already 127 – you should see the white “original value indicator” LED in the MIX section light up. Slowly turn DECAY down while repeatedly playing a note on your keyboard. You will hear the note getting shorter until it becomes a very short blip when DECAY reaches minimum. Leave DECAY at minimum for now.

SUSTAIN

Turn the SUSTAIN knob down to minimum (the original value was already 0). Now turn it up again while repeatedly playing a note on your keyboard. The original value indicator should disappear, and you should hear the volume of the sustained note change accordingly. Leave SUSTAIN at 64 and take DECAY back up to around 40.

RELEASE

Turn the RELEASE down to minimum (the original value is 4). Then, while playing notes on your keyboard, gradually turn it up again: The sound fades more slowly after you release keys. Set RELEASE to around 40 – the amplifier envelope now looks something like this:



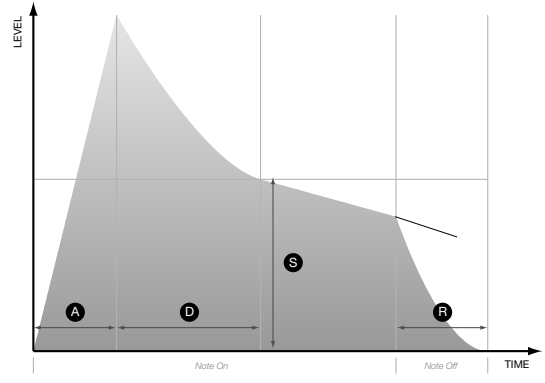
All the red labelling (blue in the case of the Pølar model) you can see on the panel identifies the SHIFT functions. To access these, hold down the SHIFT button to the left of the display immediately before using the knob or button, then release it afterwards.

PATCH VOLUME

Via SHIFT + ATTACK. The overall volume, stored as part of each program. Mainly used for balancing levels between different programs. The best value to start with is 100, leaving you some headroom to make this particular program louder in future.

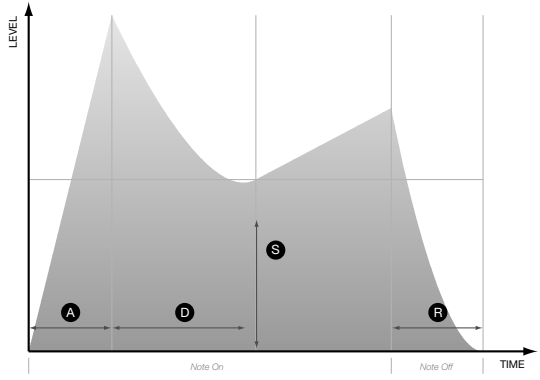
SUSTAIN SLOPE

Via SHIFT + SUSTAIN. If SUSTAIN SLOPE is set to any value other than 0, the sustain phase (which is normally flat) turns into a gradient:



Take SUSTAIN SLOPE down to -32. Negative values cause the sustain phase to fall (eventually reaching silence – you can check this by playing a relatively long note on your keyboard).

So what do positive SUSTAIN SLOPE values do to an envelope? The sustain phase rises, eventually reaching maximum if you don't release the note beforehand. Set SUSTAIN SLOPE to +32 and play a long note.



All these envelope "times" (Attack, Decay and Release), as well as what appears to be a gradient (Sustain Slope), are actually rates. This technicality can be safely ignored in practice.

TEMPO

Via SHIFT + RELEASE (in the AMP ENVELOPE section). The Virus has a master clock to which the arpeggiator is always synchronized. LFOs and delay effects can also be synchronized to this clock.

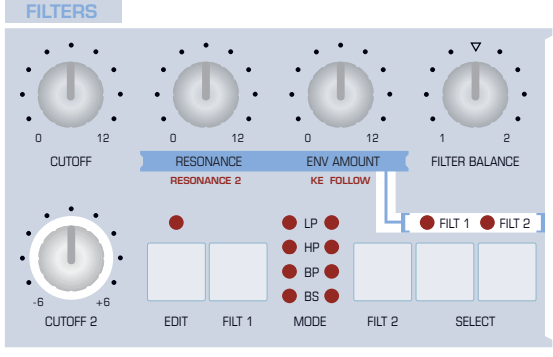
Locate the program ROM-A 26 "Dr.What?HS", switch on arpeggio HOLD (via SHIFT + ARP ON), and play a note on your keyboard. You can see the LFO1 indicator blinking in time with the arpeggio because, in this particular program, it is synchronized to the clock. Now experiment with TEMPO (SHIFT + RELEASE in the AMPLIFIER ENVELOPE section). Did you notice how smoothly the delay effect catches up with any tempo changes you make?

TEMPO has a range of 63 to 190 bpm. However, the master clock automatically slaves to any incoming MIDI clock data (including rates which are beyond these limits). In this case, the TEMPO parameter is simply ignored.

The Filters Section

In comparison with “Dr.What?”, the few sounds you have been asked to create so far have been primitive and harsh. In subtractive synthesizers such as the Virus, the tonal quality of the oscillators can be radically altered by sending them through filters.

There are two main filters in your Virus, but before learning how to access them individually, let’s start by experimenting with the three parameters you will find on any subtractive synthesizer: CUTOFF, RESONANCE and ENV AMOUNT (as it is called in the Virus):



CUTOFF

Restore ROM-A127. Vary the CUTOFF while playing notes on your keyboard. At low values, even medium frequencies are filtered out – the sound is very mellow.

As you turn CUTOFF up, higher frequencies are allowed to pass through the filters, until the sound becomes brightest at maximum CUTOFF. This is typical of lowpass (LP) filters, one of the four basic types available in the Virus.

You have actually been using two lowpass filters in series here – in ROM-A127 they have been configured to appear as just one “double-strength” filter – we will come to the responsible parameter (“Routing”) shortly.

RESONANCE

RESONANCE emphasizes any frequencies close to the cutoff position. Play a note and sweep CUTOFF as you did just now, then turn up RESONANCE and try again. At higher RESONANCE values, the cutoff frequency becomes quite dominant. You should be able to hear individual harmonics being picked out if you turn CUTOFF slowly enough. If you like, go back to program ROM-A 26 and try a lot more RESONANCE.

ENV AMOUNT

Controls how much the filter envelope affects cutoff – like automating the CUTOFF knob with each and every note you play. Here's how to make a very simple analogue bass sound:

Restore ROM-A127 and turn CUTOFF down to minimum. Play individual notes while adjusting ENV AMOUNT until you hear a satisfying “plunk” (somewhere around 70), then take the RESONANCE up a little. Locate the TRANSPOSE buttons to the left of the display, and change the setting to -1 or -2. Play your favourite funky bass riff…

The FILTER ENVELOPE section has the same structure as the AMPLIFIER ENVELOPE, so you should already know how to use these knobs effectively to modify your bass sound. Don’t forget to try SUSTAIN SLOPE (SHIFT + SUSTAIN). You should try adjusting ENV AMOUNT and RESONANCE again – filter parameters are highly interactive!

FILTER BALANCE

At -64 you can only hear the output of filter 1. In the central position (0), both filters contribute equally. At +63 you can only hear the output of filter 2.

SELECT (FILT 1, FILT 2)

Use these buttons to select which of the filters you would like the RESONANCE and ENV AMOUNT knobs to control. If you press both buttons at the same time, the knobs will apply to both filters simultaneously (as they already do in ROM-A127).

CUTOFF 2

A separate cutoff control for filter 2. This can be either an offset (i.e. a constant amount below or above filter 1) or an independent value, depending on another parameter in the filter’s EDIT menu (see “Cutoff Link” on page 145).

MODE (FLT1, FLT2)

Using the FILT1 and FILT2 buttons, you can set each filter to one of following types:

> **LP = Low Pass:** Allows frequencies below the cutoff point to pass through i.e rejects those above the cutoff point

> **HP = High Pass:** Allows frequencies above the cutoff point to pass through i.e. rejects those below the cutoff point

> **BP = Band Pass:** Allows frequencies close to the cutoff point to pass through i.e. simultaneously rejects those above and below the cutoff point

> **BS = Band Stop:** Rejects frequencies close to the cutoff point (within a certain “band”) i.e. allows frequencies above or below the cutoff point to pass through.

Your Virus actually has yet another filter mode which simulates the classic Minimoog™ low pass (including it’s typical self-oscillation). This cannot be selected directly from the panel, but only from within the filter EDIT menu. If you simply can’t wait to try it out, bookmark this paragraph and see “Mode” on page 142.

At this point you should experiment with each filter mode in isolation i.e. listen to only one of the filters at a time: Restore ROM-A127, take FILTER BALANCE down to -64 (this isolates Filter 1), and use the FILT1 button to select another mode. Play your keyboard while adjusting CUTOFF and RESONANCE. Repeat until you have become familiar with all four modes.

While experimenting with BS (Band Stop), did you notice how turning the RESONANCE knob up doesn't actually add resonance, but narrows the band instead? Very subtle...

RESONANCE 2

Via SHIFT + RESONANCE. Filter 2 resonance only. Although you can press the SELECT button labelled FILT2, then use the RESONANCE knob (without SHIFT), it is often faster to use SHIFT + RESONANCE for on-the-fly adjustments because you don’t have to check the status of the LEDs above the SELECT buttons first.

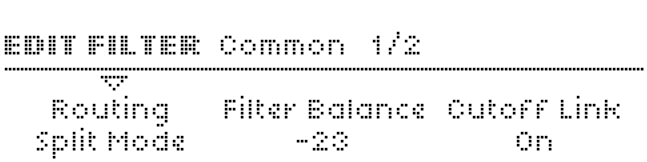
KEY FOLLOW

Via SHIFT + ENV AMOUNT. High notes are generally brighter than low notes when played on acoustic instruments. KEY FOLLOW can emulate this effect by making Cutoff follow the notes you play...

Restore ROM-A127, take CUTOFF down to around 64 and play the keyboard to get used to the sound of a “flat” filter across the entire keyboard. Then hold down SHIFT and turn KEY FOLLOW (i.e. the ENV AMOUNT knob) up to maximum. Play your keyboard again.

> Into the Filter Menu

There are several important parameters in the filter menu, a few of which have already been mentioned in passing – here are the ones you should become familiar with first. Press the EDIT button in the FILTERS section and use the PARAMETER buttons to find the following page:



Routing

Here's that "Routing" parameter mentioned earlier – twist the VALUE 1 knob to see the various options...

So far you have used the filters either in series (the output of filter 1 is sent to the input of filter 2) or in isolation (by setting extreme FILTER BALANCE values). Here is a list of all four routing options – you might like to look up the word "Pole" in the glossary:

> **Serial 4:** The filters are routed in series, with two poles each (12dB per octave). This adds up to a total of four poles (i.e. 24dB per octave) if FILTER BALANCE is dead centre (0).

> **Serial 6:** The filters are routed in series. Filter 1 has four poles (24dB per octave) and filter 2 has two poles. This adds up to a total of six poles i.e. 36dB per octave if FILTER BALANCE is dead centre (+0).

> **Parallel 4:** The filters are routed in parallel, with two poles each.

> **Split Mode:** The filters are also routed in parallel, with two poles each. Unlike the Parallel 4 mode, each filter processes a different set of sources: Oscillator 1 and the sub-oscillator are routed to filter 1, whereas oscillator 2, its FM signal and noise are routed to filter 2. The ring modulator (see "RING MODULATOR" on page 137) is disabled.

To step through filter routings without having to open the menu, hold down SHIFT and press the Filter 2 button (labelled FILT2).

Cutoff Link

When set to "Off", the CUTOFF knobs are independent of each other. CUTOFF controls filter 1, CUTOFF 2 controls filter 2. When Cutoff Link is set to "On", the CUTOFF knob can control both filters at the same time – CUTOFF 2 becomes an offset i.e. it determines how much lower or higher filter 2 is than filter 1. Note that Cutoff Link is normally left on (as it is in most programs, including ROM-A126 and ROM-A127).

About Saturation

The term "Filter Saturation" was originally coined to describe the effect caused by pushing the input of a filter beyond its natural limits. Jan Hammer's work on "Birds of Fire" (Mahavishnu Orchestra) is a classic example but, depending on your age and/or musical tastes, you might be more familiar with the searing techno "bass lines" and various other distorted synthesizer sounds used in more recent music.

In the signal flow, the saturation stage comes immediately after Filter 1. Therefore if you have added a lot of overtones, you can still filter them out using filter 2 (assuming the routing is serial - see above).

Access have kept the term “Saturation”, but greatly expanded on the idea – several different Saturation types can be selected (via SHIFT + OSC VOLUME). Here are a few experiments to get you started:

Hold down the SHIFT button and turn the OSC VOLUME knob to see the various SATURATION TYPEs. Select one of the more drastic types e.g. “Digital”, release the SHIFT button and experiment with OSC VOLUME (i.e. without using SHIFT). You might like to filter the results now!

Now let’s try out some of the other saturation types. Turn the SHAPE knob down to minimum and try out the Wave Shaper and Rectifier types in turn. Again, you should experiment with OSC VOLUME because this parameter affects the tone.

The Bit Reducer, Rate Reducer and Rate+Follow types can be used to emulate the tonal characteristics of early digital synthesizers and samplers. You may not like these at first, but they can certainly add “grit” to a sound.

Finally, you should try out the four additional saturation types (which are actually additional filters). High+Follow is especially useful for thinning out a sound without using filter 1 for this purpose.

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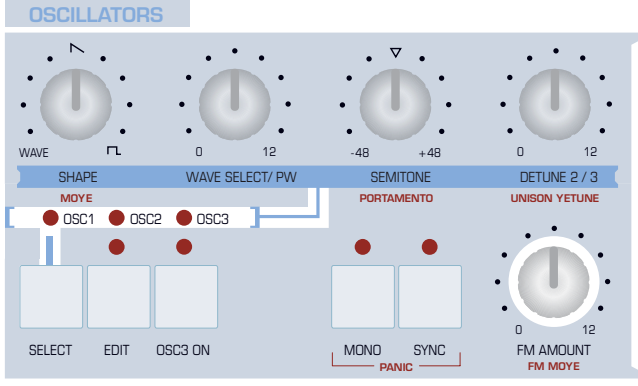
The Filter Envelope Section

This obviously has the same structure as the amplifier envelope. Using your knowledge from previous experiments, use all the filter knobs and buttons (plus the Routing parameter in the filter EDIT menu) to make a new sound from scratch. If you feel the need to save your work at any point, bookmark this page and read the information about “Store” on page 136.

The Oscillators Section

This is where the raw sound is generated. There are three main oscillators but only one set of knobs in the top row, so we'll start with a very important button – the one that selects which particular oscillator you want those knobs to control...



SELECT

Restore ROM-A127 and take a look at the row of LEDs above the SELECT button. OSC1 is currently active, so whatever you do with the top row of knobs will only affect oscillator 1. There is actually an exception to this rule (DETUNE 2/3), but we'll get to that in due course.

SHAPE

In your experiments so far you have only used one type of wave – a Sawtooth. Now it's time to try out some of the other waveforms:

Restore ROM-A127 and play your keyboard while turning the SHAPE knob. At minimum you will hear a pure Sine wave, in the centre a pure Sawtooth, and at maximum a pure Pulse. Listen to those extremes for a while, then try out different mixtures using the SHAPE knob. You will see the percentage mixture of waveforms being updated whenever you turn the knob.

Again, the Virus TI has much more under the hood than is immediately apparant: As well as the "Classic" oscillators we have been using so far, the TI offers two other highly interesting types called "HyperSaw" and "WaveTable". Please be patient – you will be trying these out soon enough!

I only mentioned Sine, Sawtooth and Pulse above. However, the Sine is only one of 64 waves available in Classic mode, and the Pulse can change it's "width". The very clever knob labelled WAVE SELECT/ PW controls both of these parameters, but not at the same time...

WAVE SELECT/ PW

Turn SHAPE down to minimum (the display should read "Spectral Wave" for a short while) and play a note on your keyboard while turning the WAVE SELECT/ PW knob. The first two entries in the list of WAVEs are available in many different synthesizer models – Sine and Triangle. All the others (3 to 64) are more complex additive waveforms. If you are interested in seeing a graphic image of all these waves, have a look at the Oscillator page of the VirusControl plug-in.

If the value of SHAPE is the central "Sawtooth" or above, there is no "WAVE" in the mixture at all. In this case the WAVE SELECT knob is free to change its function entirely – it becomes a Pulse Width (PW) control instead...

Turn SHAPE up to maximum for a pure Pulse wave i.e. no Sawtooth at all, then try turning WAVE SELECT/ PW up again. The display now reads "Oscillator 1 Pulse Width". As the pulse becomes narrower, the sound becomes progressively thinner – it even disappears entirely when you reach 127.

Now play a low note on your keyboard and move the WAVE SELECT/ PW knob fairly rapidly back and forth – this is the typical cyclic "pulse width modulation" effect which you will learn how to automate (using an LFO) later on.

SEMITONE

Use this knob to adjust the pitch of each oscillator over a range of -48 to +48 semitones:

Go to ROM-A126 -START- (we are using a slightly different template this time!) and play your keyboard. You are obviously hearing two oscillators at the same time – and they are slightly out of tune with each other. Use the SELECT button to choose oscillator 2 and turn the SEMITONE knob up to +7. The steps are automatically smoothed while you turn the knob, but the pitch will always settle on semitones. This means you don't use SEMITONE for fine tuning...

DETUNE 2/3

...this is the knob you can use for fine-tuning oscillator 2 and/or oscillator 3. Take SEMITONE back to the centre (0) and try out different DETUNE 2/3 values while playing your keyboard.

At moderate values you can get some pleasant phasing effects. High values can make the oscillators sound completely out of tune with each other – also a useful effect when used in the right context!

SYNC

When this function is active (while using “Classic” oscillators), oscillator 2 is synchronized to oscillator 1. Look up Sync in the glossary if necessary. One popular use of Sync is to create an effect similar to a bandpass filter with a lot of resonance and some distortion:

Restore ROM-A126 and press the SYNC button – the rhythmic beating between the two oscillators is eliminated. Select oscillator 2 and play some notes while sweeping the SEMITONE control from slightly below centre to maximum. If you would like to hear oscillator 2 in isolation, turn the OSC BALANCE knob (you will find it in the MIX section) up to maximum. If you leave SEMITONE at certain fixed positions, you can get some interesting static overtones.

Tip: If a sound ever gets annoying, filter it!

OSC 3 ON

Although the third main oscillator may appear to have all the same options as the other two, it is highly dependent upon what is currently happening with oscillator 2:

Restore ROM-A126, select oscillator 2 and change SEMITONE to +7. Press the OSC 3 ON button (its status LED will light up) and select oscillator 3 (both LEDs above the OSC3 ON button are lit). If you now try changing SEMITONE, you won’t notice any effect. This is because oscillator 3 is currently a slave to oscillator 2. Try changing WAVE SELECT from Slave to Saw, then adjust SEMITONE to +4.

Tip: When oscillator 3 is active, you can control oscillator 3 volume from the panel via SHIFT + SUB OSC VOLUME.

MONO

This button selects whether the entire sound is polyphonic or monophonic (there are several mono key modes available). Although your Virus is polyphonic at heart, monophonic sounds can be particularly expressive, especially when portamento (coming shortly) is applied.

Tip: To step through all Key Modes, hold down SHIFT before pressing the MONO button.

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FM AMOUNT

FM stands for Frequency Modulation. This means that the frequency of one audio source is modulated by another – the FM AMOUNT parameter determines how much. As well as being able to create bell-like tones, FM is often used to add grit to a sound.

You should always think of the FM signal as being an integral part of oscillator 2.

Restore ROM-A126 and turn oscillator 1 SHAPE down to 0 for a pure sine wave. Select OSC2 and turn its SHAPE all the way down as well. Now find out what the FM AMOUNT knob does to the sound...

FM MODE

Via SHIFT + FM AMOUNT. Selects one of several different FM modulator sources. If you feel like experimenting with this parameter, start by changing the FM mode from Pos Triangle to Triangle.

UNISON DETUNE

Via SHIFT + DETUNE 2/3. Unison means several instances of the same note at the same time. For UNISON DETUNE to have any effect, the number of stacked (layered) voices must of course be greater than 1. For this we need to go into one of the EDIT menus...

Restore ROM-A126, press the EDIT button to the left of the display and use the PARAMETERS buttons find the UNISON page. Set the Voices parameter to maximum (8) and ↖EXIT the menu. Play your keyboard – quite a powerful lead sound already. Now use SHIFT+DETUNE 2/3 to take UNISON DETUNE up to maximum.

For much more of a “Hoover” type sound, turn DETUNE 2/3 (without SHIFT this time!) up to around 115, and add some SUB OSC and NOISE (look in the MIX section). Might as well activate Oscillator 3 as well for maximum power: Press the OSC3 ON button...

This type of sound is actually much easier to make using the new HyperSaw oscillator mode (see the end of this chapter), but you should learn about the “Classic” oscillator models first.

Now add a simple delay effect by turning delay SEND and FEEDBACK up a little (you will find both these knobs in the EFFECTS section). Play your keyboard while tweaking the CUTOFF knob.

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PORTAMENTO

Via SHIFT + SEMITONE. Often called glide, portamento means slurring / slowing down the pitch changes between consecutive notes. Take the portamento value up and play your keyboard. Portamento is particularly effective in mono modes (see “Key Mode” on page 122).

The Mix Section

Most of the knobs here are self-explanatory. They are volume controls for the signal sources:

OSC BALANCE

This knob controls the relative mix of oscillators 1 and 2 while keeping the total level constant. The 12 o'clock position is a 50:50 mix of both these oscillators. Try this:

Restore ROM-A127. Play a note and turn SEMITONE down to -5. Keep playing your keyboard while turning OSC BALANCE slowly up to maximum. You can only hear oscillator 2 now. Turn up FM AMOUNT and leave it at a medium level. Now turn OSC BALANCE down again. You can only hear oscillator 1. No oscillator 2 and – perhaps surprisingly – no FM. That's because FM is really part of oscillator 2, remember?

SUB OSC VOLUME

The sub-oscillator is always an octave below oscillator 1 – restore ROM-A127 and try turning it up. The sub-oscillator is one of several sources whose level is ultimately controlled via OSC VOLUME:

OSC VOLUME

This is a group level control for all the following sources: Oscillator 1, oscillator 2 (including FM), oscillator 3 and the sub-oscillator. Noise and Ring Modulator levels are independent of OSC VOLUME – that's why the knob for these parameters is located below it. Here's a short practical demonstration:

Restore ROM-A126 and change SEMITONE (oscillator 1) to -5. Hold down a note on your keyboard and listen to what happens as you turn up the following:

FM AMOUNT (in the OSCILLATORS section) = 20
SUB OSCILLATOR = 80
NOISE VOLUME = 80
RING MODULATOR (SHIFT + NOISE VOLUME) = 80

Now turn OSC VOLUME all the way down. Which sources can you still hear, and why?

The upper half (at least) of OSC VOLUME also has another important job. It controls the amount of filter saturation, mentioned a few pages earlier. The idea was to make OSC VOLUME similar to the gain control on a guitar amplifier – the signal starts distorting when you turn it up “too high”.

NOISE VOLUME

Simply the volume of the Noise generator.

PANORAMA

Via SHIFT + OSC BALANCE. Pans the entire program across the stereo outputs.

OSC 3 VOLUME

Via SHIFT + SUB OSC VOLUME. The volume of oscillator 3 when it is switched on. If you would like all three main oscillators to have the same level, you should set OSC BALANCE to the centre and OSC 3 VOLUME to 64.

SATURATION TYPE

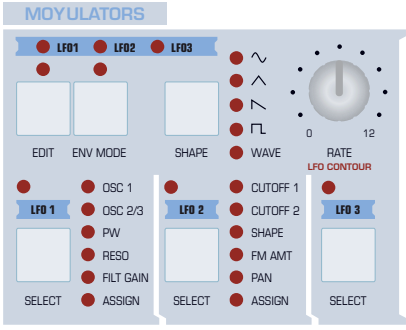
Via SHIFT + OSC VOLUME. See above.

RING MODULATOR

Via SHIFT + NOISE VOLUME. Ring modulation means multiplying two signals together. Like FM, the result is highly dependent upon the basic frequencies and complexity of the two sources. For pure bell-like tones, use Sine waves only:

Restore ROM-A126, take SHAPE down to minimum. Select oscillator 2 and do the same. Turn OSC VOLUME down to minimum and RING MODULATOR (SHIFT + NOISE VOLUME) up to maximum. Turn amplifier RELEASE up to around 90, select oscillator 2 and experiment with the SEMITONE knob.

The Modulators Section



LFOs (Low Frequency Oscillators) are often used to add some cyclic movement to otherwise static sounds. There are three LFOs in your Virus, and each one has a different assortment of preset destinations it can modulate directly.

The three SELECT buttons are used to switch between LFOs – the upper row of buttons and the RATE knob will only apply to the LFO you select here. Try pressing the LFO2 SELECT button, turn the RATE knob and see which (white) LED changes speed. Here's another experiment...

Restore ROM-A126. The row of LEDs to the right of the LFO1 and LFO2 SELECT buttons indicate which parameters you can modulate directly. For LFO1 these are Oscillator 1 pitch (OSC1), Oscillator 2 pitch (OSC2/3), Pulse Width (PW), Resonance (RESO), Filter Gain (FILT GAIN) and another destination called ASSIGN. None of the LEDs are lit up at the moment because you haven't specified any modulation yet:

Although it is already active, try pressing LFO1's SELECT button again – this opens the LFO1 Destinations menu. Repeatedly press LFO 1 SELECT to switch between the 3 available pages (of course you can use the PARAMETERS buttons instead), then stop at the page containing the Osc1+2 Pitch parameter. Play a note on your keyboard while turning Osc1+2 Pitch (via the VALUE 2 knob) all the way up.

Press the SHAPE button once to select a falling Sawtooth instead of Triangle. While playing a note on your keyboard, turn RATE up to 90, then use the VALUE 2 knob to take Osc1+2 Pitch slowly down to minimum. The modulation becomes inverted because this parameter is bipolar (meaning it can have positive or negative values). Now turn Osc2 Pitch (the VALUE 3 knob) up to maximum. The oscillator pitches are now moving in opposite directions.

Hold down SHIFT and press the SHAPE button once to return to the Triangle wave. Take Osc1+2 Pitch to +10 (which brutally overrides the other values in this page). You should hear a mild vibrato effect. Try turning CUTOFF down and ENV AMOUNT up – it doesn't matter that you haven't closed the LFO Destinations menu yet.

Turn the SHAPE knob in the OSCILLATORS section up to maximum. Oscillator 1 is now a Pulse wave. Press the LFO 1 SELECT button once again to open the next page. Take Pulse Width (the VALUE 1 knob) up to maximum and play your keyboard. This is deep cyclic "pulse width modulation" (PWM). The

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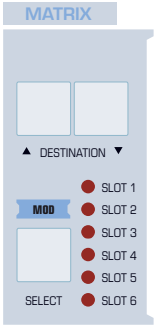
top three status LEDs for LFO1 are now lit up because you have now defined some modulation for each of these destinations.

Press the LFO1 SELECT button yet again. The value of Assign Target (VALUE 1 knob) is one of many possible destinations that are also available in the MATRIX section...

The Matrix Section



This is where you can route just about any control source to almost any parameter you like – modulation wheel to vibrato, velocity to panorama, filter envelope to phaser frequency, a random offset to delay time etc.. The MATRIX is a playground for anyone who wants to go beyond what the Virus already has to offer in terms of realtime control. Six sources can be routed to three different destinations each, making a total of eighteen connections. Let's make a simple old-style monophonic lead sound:

Restore ROM-A126. Turn CUTOFF down to 64, take ENV AMOUNT up to 75 and set DETUNE 2/3 to 64 for a bit more "thickness" than before. To make the program monophonic with a typical "legato" portamento, press EDIT in the OSCILLATORS section twice (!) and locate the first Common page (via the PARAMETERS buttons). Change Key Mode to Mono 4, navigate to the next page and set Portamento to 32. Play your keyboard and listen what you've managed so far.

Now to the MATRIX. In ROM-A126, the uppermost LED should already be lit – meaning Slot 1 has already been used for something in this program. Press the SELECT button in the MATRIX section to open Slot 1 and see what it is. The modulation source has been set to "Mod Wheel" and the destination is LFO3 Assign Amt i.e. the wheel will control the amount of whatever LFO3 has been assigned to.

Try out the left-hand controls on your keyboard. Pushing the mod wheel (or stick) away from you adds vibrato to the entire sound because LFO3 has been set to modulate the pitch of all oscillators – press the LFO3 SELECT button (in the MODULATORS section) twice in succession to check this. Go back into the MATRIX by pressing its SELECT button.

Press the righthand DESTINATIONS button, change the amount to +5 and the destination to "LFO3 Rate" using the VALUE knobs. Remember that you can nudge values using the VALUE buttons!

Exit the menu and play your keyboard, making use of its mod wheel (stick, ribbon or whatever). Vibrato will now get slightly faster as it deepens...

If your keyboard also features channel pressure (i.e. aftertouch), you could try this: Press SELECT twice in succession to open Slot 2, set the source to "Chan Pressure", the first amount to +32 and its destination to "Filter1 Cutoff". Exit the menu again and play your keyboard again – try pressing harder on the keys this time.

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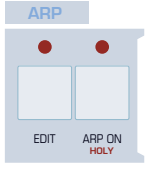
The Arp Section



Arpeggiators are so much fun that I will leave you to experiment on your own – the following is just to help you get started:

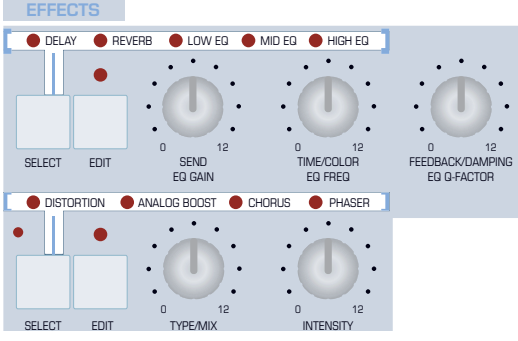
Go to program ROM-A 7 BellBoy BC, take amplifier RELEASE down to 42 and press the ARP ON button. Hold down a note, tap several more notes at random with your other hand, then release the first one. All notes are played back in a regular rhythm, from the lowest upwards. Of course you can change this behaviour: Press EDIT in the ARP section, locate the first page, change the Mode to “As Played”, change Octaves to 2 and Pattern to 4.

If all those preset patterns are not enough, you can program your own using the VirusControl software (see “VirusControl” on page 145).

The Effects Section

This section is split into two halves (with separate EDIT buttons). The top half is dedicated to Delay, Reverb and EQ effects, while the lower half features Distortion, Analog Boost, Chorus and Phaser. Any or all of these effects can be applied at the same time – just press the SELECT button to choose the required effect (e.g. REVERB), then adjust values using the knobs.

The most useful parameters for realtime performance are directly available – to reach all the others, open the EDIT menu.



DELAY

Restore ROM-A127 and select DELAY in the effects section. Set all the following knobs to their central positions: OSC BALANCE, FM AMOUNT (exactly 64), DETUNE 2/3, CUTOFF, ENV AMOUNT and SEND (in the EFFECTS section). Take TRANSPOSE down an octave. Play the keyboard – you should be able to hear a single delay. Now experiment with the TIME and FEEDBACK knobs.

REVERB

Now let's add some reverb to the delay (which, by the way, was not possible with earlier Virus models): Press the upper SELECT button in the EFFECTS section once, and try adjusting the same three knobs (now SEND, TIME and DAMPING)...

EQ

Although often overlooked, the 3-band equalizer is a very powerful feature of the later Virus models. Of course EQ can be used in a conventional way to manipulate the overall tonal characteristics of a sound, but at least the MID band can be used a little more creatively than that:

Restore ROM-A127. Transpose down an octave. Select MID EQ in the EFFECTS section. The three knobs now control EQ GAIN, EQ FREQ and EQ Q-FACTOR respectively. Experiment with these knobs to change the character of the raw oscillator sound for a while, then try this:

Make sure MID EQ is still selected, press EDIT and set the Q-Factor to maximum (15.4). Set Gain to maximum (+16) and Frequency to around the centre (747.8). The sound should now be rather nasal. Press LFO1 SELECT repeatedly until you see the page containg the Assign Target parameter. Change this to "EQ Mid Frequency" and Amount to +32. The result is an automatic wah-wah effect which is independant of the filter section – try adjusting CUTOFF, RESONANCE and ENV AMOUNT...

The following effects are accessed using the lower half of the effects section.

Distortion

Especially if you remember your experiments using Saturation, this effect should be fairly obvious – the names of the distortion types are the same.

The difference between (filter) Saturation and (effect) Distortion is that the former is applied to each individual voice, whereas the latter is applied to the sound as a whole. This means that if you would like e.g. to emulate the sound of an overdriven guitar amplifier, you should use Distortion, not Saturation.

Analog Boost

Analog Boost is a special type of equalization used to emulate the tonal characteristics of real analogue synthesizers. These tend not to have a flat response. The difference is often subtle, but well worth trying out after you have programmed a basic sound.

Chorus

Chorus is especially useful to give “pads” more movement. In combination with Feedback, the Chorus in your Virus is also capable of Flanging and other related effects:

Restore ROM-A126, select CHORUS and turn the MIX level up to 64 (via the TYPE/MIX knob). Experiment with the INTENSITY knob (controls Feedback). Press the lower EDIT button once and try out all those other parameters...

Phaser

This is a very good emulation of a multi-stage analogue phaser using up to six so-called “All-pass filters”. The parameters are similar to those for Chorus, but here you cannot select a Mod Wave (it is always Triangle). The Stages parameter specifies the number of allpass filters used, and the Spread parameter sets how far apart their cutoff frequencies are.

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Starting from ROM-A126, turn down OSC VOLUME, turn up NOISE VOLUME and try out all the Phaser parameters!

The Master Section

If you have carried out all the little experiments in this chapter so far, you should be quite familiar with how the EXIT, SHIFT, PARAMETERS/BANK and VALUE/PROGRAM buttons work in SINGLE mode. Which leaves us with the following:

TAP

Use this button to change the Clock rate “by ear”. Select the program ROM-A9 (“Boingy HS”) and activate the HOLD function (SHIFT + ARP ON). Play some notes on your keyboard, then try tapping the TAP button slower than the current BPM – the arpeggio will be slowed down.

MULTI EDIT

Via SHIFT + EDIT. This is only used in Multi mode – see “Multi Mode Reference” on page 165.

CONFIG

Press this button for access to many global parameters which govern how the entire Virus works – see the chapter “Configuration Reference” on page 151.

STORE

1st press: Set the location (Bank, Patch Number) of the program you wish to overwrite. Press UNDO to compare with the original sound at this location.

2nd press: Use the PARAMETERS buttons and any VALUE knob/button to change the name.

3rd press: Finally, store the program.

REMOTE

Via SHIFT + CONFIG. This instantly turns your unit into a MIDI controller box, including presets for a wide variety of popular devices and the capability of creating your own (see “Virus-Control” on page 145).

If you only see a message here, your Virus TI has a very early version of the operating sytem. Go to www.access-music.de for operating system updates and additional Remote Templates – as well as many other useful downloads!

RANDOM

Via SHIFT + STORE. Randomizes the current program to create a new sound – the CONFIG menu contains parameters which determine just how “random” the results will be. Start

with any sound you like and use the RANDOM function several times in succession, each time checking how the sound has been affected.

UNDO

Try pressing UNDO after a particularly unsuccessful press of the RANDOM button (see above).

UNDO actually has 3 related functions: While a program is being edited, it cancels the most recent parameter change. Immediately after selecting another program, it retrieves the most recently edited program. During STORE, use it to compare your edited program with the one you are about to overwrite. Just press UNDO again to return to your sound.

REDO

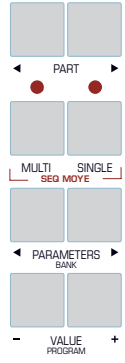
Via SHIFT + UNDO. Restores the current program to its previous state i.e. before you pressed UNDO.

SEARCH

Opens a menu in which you can scroll through all programs belonging to the current category (see “Categories” on page 134). Use the VALUE 1 knob to select a category and the VALUE buttons to scroll through programs (the names appear in the upper bar). When you have found a suitable one, press the ↖EXIT button.

AUDITION

Via SHIFT + SEARCH. Plays a note (C3) without you having to connect a keyboard or sequencer.



MULTI

Switch to Multi Mode – see “Multi Mode Reference” on page 165.

PART

These buttons have no function in Single mode – see “Multi Mode Reference” on page 165.

SINGLE

Switch to SIngle Mode. Also exits any open menu.

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SEQ MODE

Via MULTI + SINGLE. Switch to Sequencer Mode, the mode of choice for multitrack MIDI sequencing (see “Sequencer mode” on page 15 and “VirusControl” on page 145).

HyperSaw and WaveTable

To supplement their “Classic” Virus oscillators, Access has added two very powerful oscillator modes...

HyperSaw

Restore ROM-A127, open the oscillator 1 EDIT menu and change the Mode to “HyperSaw”. The other two parameters in this page should now read “Density” and “Spread”.

Density (also via SHAPE knob) sets the number of saws.
Spread (also via WAVE SELECT) detunes them.

Set Density to 9.0 and Spread to about 80. Turn CUTOFF and FILTER BALANCE to minimum and ENV AMOUNT to maximum. Experiment with filter DECAY and RESONANCE...

Experiment with SUB OSC VOLUME, then press the SYNC button and try turning the FM AMOUNT amount knob. All three of these controls have different “meanings” in HyperSaw mode: SUB OSC VOLUME determines the balance between HyperSaw and its own **integrated** sub-oscillators. SYNC activates the **integrated** synchronization . FM AMOUNT controls sync offset.

Note: The preceding paragraph applies to oscillator 1 only

WaveTable

Restore ROM-A127, open the oscillator 1 EDIT menu and change the Mode to WaveTable. The other two parameters in this page should now read “Index” and “Table”. Set the Table to e.g. 10, and play your keyboard while adjusting the Index parameter. Try out other Tables...

Index sets a nominal position within the current wavetable
Table selects one of the many available wavetables

Each Table (except Sine) consists of multiple waveforms. Unlike scrolling through the spectral waves available in Classic mode, the indexed waves are cross-faded for smooth transitions. To make full use of wavetables, the Index should be modulated by using e.g. the LFO2 “Shape 1+2” preset destination (see next paragraph) or using e.g. “Wavetable 1 Index” as destination in the MATRIX.

Press LFO2 SELECT a few times until the “Shape 1+2” parameter appears in the menu. Take the amount up to +32. Activate ENV MODE and change SHAPE to the falling sawtooth. Adjust the Index to taste using the oscillator SHAPE knob. Again, try out different wavetables via WAVESELECT/ PW...

END OF TUTORIAL – HAPPY PROGRAMMING!

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3: VirusControl

Introduction

The aim of this section is to help you get the most out of the VirusControl plugin – the hub of Access' Total Integration concept. For detailed information on the functionality of all the various parameters within VirusControl, please refer to the Virus TI User Manual.

By means of a single USB connection, the TI not only handles communication of all the MIDI data, but also up to 4 stereo audio streams (2 x stereo for the Virus itself, plus 2 x stereo for the soundcard functionality). External audio signals can be processed via the balanced analog inputs or S/PDIF I/O, or routed directly to your sequencer host. The studio-grade audio convertors even allow the Virus TI to be used as your computer's soundcard, meaning your sequencer can send its master output signal to the outputs of the Virus, and the external MIDI ports can be used as a MIDI interface for controlling external hardware.

What is 'Total Integration'?

'Total Integration' describes the way in which the Virus TI can sync with your computer far more deeply than has previously been possible with hardware synthesizers, thus enabling it to function within a software host as comfortably as any native VST instrument or Audio Unit.

What is VirusControl?

VirusControl is a VSTi or AudioUnit plug-in which runs in your sequencer host, and is effectively a software representation of your Virus TI. Audio and MIDI data from all 16 parts of the Virus are streamed directly into your sequencer, making the TI feel just like a native plug-in. The myriad sound-editing parameters available in the Virus are presented in convenient pages, and the extensive librarian functionality allows you to manage not only the patches on your harddrive, but also in the TI itself.

Why use VirusControl?

Over the last several years, increasing numbers of musicians have been turning to so-called 'softsynths' or 'virtual instruments', largely due to a number of perceived benefits that they offer over their hardware counterparts, for example: sample-accurate playback and automation of parameters, total recall of patch data and virtually limitless storage space for patch libraries.

The main downsides to softsynths have always been the lack of a dedicated, tangible control-surface and not least the heavy load some of these instruments can place on the host CPU.

This is where the combination of the Virus TI synthesizer and the VirusControl plug-in comes into it's own – since the heavy-duty calculations required to produce the incredible sounds of

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the Virus TI all happen outside of the host computer, your computer's CPU is free to do other things, whilst you get to enjoy what all good synthesists love best, which is twiddling with our knobs.

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Compatibility

VirusControl requires either a Windows or Macintosh computer with a USB 1.1 interface, and a host application which supports the VST 2.0 protocol or Apple Audio Units. Whilst we are working hard to maintain compatibility with as many sequencer hosts as possible, we currently recommend the following hosts for full compatibility:

Mac OS X:

· Apple Logic 7.2 or higher

· Steinberg Cubase SL/SX3.1 or higher

· Ableton Live 5.2 or higher

Windows XP

· Steinberg Cubase SL/SX3.1 or higher

· Ableton Live 5.2 or higher

· Fruity Loops Studio 5 or higher

For the latest news on compatibility, check our website at http://www.access-music.de/?go=compato

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Starting Up

Before you can use VirusControl, it must be installed to your computer's harddrive along with the ASIO/Core Audio and MIDI drivers. Please run the Virus TI Software installer which can be found on the CD supplied with your TI – alternatively, visit the following website and download the latest version.

http://www.access-music.de/?go=support

Installation on Windows XP

Steps to perform

Do not connect the virus to your computer until the installer asks you to do so

1) Run the file 'Virus TI Software.msi'

2) Follow the onscreen instructions carefully

Driver Signing

During installation of the audio and MIDI drivers, you will encounter several warning messages alerting you to the fact that the drivers are not 'signed'. This is nothing to worry about - please click on 'Continue Installation' each time you see this.

'Found New Hardware' Wizard

It is likely that you will also encounter the 'Found New Hardware' Wizard a couple of times – please click 'Cancel' whenever these appear, as the Virus Installer will take care of everything by itself.

If the installer appears to hang for a while during the installation process, please check to see if there are any alert messages hidden underneath the currently displayed window.

Once the driver installation is complete, you will be presented with the Virus TI Firmware Installer. Please run this to ensure that the OS in your Virus TI is up-to-date.

Please ensure a stable power supply whilst installing the firmware, and don't go touching any knobs, no matter how tempted you may be, until the installation is completed!!

It always makes good sense to perform a system reset after updating the firmware – to do this, simply power off the Virus by pressing both of the Transpose keys, and press ARP EDIT.

In the unlikely event that the installation process fails, you will need to put the Virus into Update Mode before running the firmware installer again. To do this, remove the power cable and hold down the EXIT button whilst you reconnect it.

Missing drivers

Under certain circumstances, Windows doesn't automatically find drivers. All Virus TI related drivers can be found here, in case you need to point the installer into the right direction:

C:\Program Files\Access Music\Virus TI\Audiodriver

Re-running the installer

Once the installation has been completed you can run the installer again by choosing it from within the Access Music/ Virus TI folder in the Start Menu.

Installation on Mac OS X

Connect you Virus TI to any USB port

1) Run the file 'Install Virus TI Software.mpkg'

2) Follow the onscreen instructions carefully.

Although it's not mandatory, it's always a good idea to run Disk Utility after an installation and perform "repair permissions".

Once the driver installation is complete, you will be presented with the Virus TI Firmware Installer. Please run this to ensure that the OS in your Virus TI is up-to-date.

Please ensure a stable power supply whilst installing the firmware, and don't go touching any knobs, no matter how tempted you may be, until the installation is completed!!

It always makes good sense to perform a system reset after updating the firmware – to do this, simply power off the Virus by pressing both of the Transpose keys, and press ARP EDIT.

In the unlikely event that the installation process fails, you will need to put the Virus into Update Mode before running the firmware installer again. To do this, remove the power cable and hold down the EXIT button whilst you reconnect it.

Sequencer host related tips & tricks

Before you start working, please have a look at the setup hints within the host tutorials. At the time of writing there are tutorials for Apple Logic, Steinberg Cubase and Ableton Live.

Loading VirusControl

Before you start your host application, please ensure that the Virus TI is switched on, and connected to your computer via USB.

Once the host application is running, load VirusControl in exactly the same way as you would any other VSTi/Audio Units – please refer to your host's manual for details on how to do this. When you open the list of available VSTi's, VirusControl is listed under 'Access Music' as 'Virus TI'

Whenever you load VirusControl in your host software, you will see a progress bar in the VirusControl, and a 'Syncing Patches' message in the TI's display – this process is necessary to ensure that the RAM banks in VirusControl are a true representation of those in the TI. Please wait until all messages have disappeared before attempting to play anything, since playback is disabled during this process.

Please be aware, that since a single instance of VirusControl manages all 16 parts of the Virus TI, it is not possible to open more than one instance in your sequencer, and as such you should not attempt to do so.

For specific information on how best to use VirusControl in your chosen host, please refer to the host-specific tutorials which are included in the installation.

Part Status

No matter which page you are on, the left side of the VirusControl will always display the status of each of the Virus TI's 16 parts. The text of the part currently selected for editing is displayed in red.

Page Tabs

Across the top of the VirusControl interface you will see a row of tabs, labelled 'Easy', 'Browser', 'Osc' etc. Click on these to switch between the available pages. To the right of this row, there is a switch labelled 'Patch' and 'Utility'. 'Patch' displays all the pages containing parameters which affect only the currently selected part - select 'Utility' to access the Remote page.

Adjusting Parameters

Click+Hold on any knob, slider or parameter value, and drag the mouse to adjust.

To achieve a finer resolution, hold the Shift key while you adjust the parameter. When adjusting knobs, try moving the mouse away from the knob, and following a wider arc.

To set a parameter to its default value, hold the Ctrl key (Mac users hold the Cmd key) whilst clicking on it.

Most pages contain certain parameters can be adjusted by clicking the graphical representations of the parameter and dragging them with the mouse. For example: both resonance and cutoff can be controlled simultaneously by dragging the little square in the middle of the Cutoff knob for that filter; the oscillator waveforms can be adjusted by grabbing the picture of the waveform and moving the mouse – in fact, nearly every page of the VirusControl offers the user an opportunity to manipulate the parameters of the Virus in a more intuitive and fun way than just turning another knob.

Alternatively, you may wish to use the knobs and buttons on the hardware itself - you'll be glad to know that any change you make on the hardware will be reflected in the Virus Control simultaneously.

Automation of Parameters

Most of the parameters you see in the VirusControl can be automated by your sequencer host. Please refer to the user manual of your preferred host for instructions on how to do this.

Some hosts do not list all the parameters as immediately available – if you wish to add a parameter to the list, right-click (Mac Alt+Click) on the parameter's controller and choose 'Add "parameter" to Automation".

If you wish to send CC data to your host instead of automation data, then you can use the 'Virus Default' template in Remote Mode (see REMOTE page).

Automating Volume and Panorama can be somewhat special. Some hosts, such as Apple Logic for instance, do assign Ctrl #7 and Ctrl #10 to the channel strip controls and therefore filter those data. In order to automate Volume and Panorama with those hosts, you need to choose the appropriate entries within the list of automatable parameters instead.

Information Bar

Extending along the bottom of the VirusControl you will see a black rectangular box with blue text. This displays the full description of the parameter on which the mouse pointer is positioned.

Patch/Utility

This tab determines which pages are selectable.

EASY Page

Once the synchronisation is completed, you will be presented with the ‘Easy’ page. Here you will find a small selection of powerful sound-sculpting controls, along with the 3 Soft Knobs and a few effects.

The large controller in the centre of the page is the filter control – turn the dial to change the Cutoff, or try moving the little red square to sweep Cutoff and Resonance simultaneously. The filter type can be adjusted by clicking on ‘Lowpass’ and moving the mouse vertically.

For a full description of any parameter, simply manoeuvre the mouse pointer over it, and take a look at the Information Pane located at the bottom of VirusControl.

If you wish to learn more about the functionality of a particular parameter, please refer to the Sound Parameters Reference chapter in the Virus TI User Manual. You will find PDF versions of the manual in several languages on your harddrive, under

Windows:
Start Menu: Access Music\VirusTI\Documentation

Mac:
Applications/Access Music/Virus TI/Documentation

(as it is a PDF you can search the document for specific parameter names).

BROWSER Page

The Browser page is where you can locate and manage all of the presets on the TI, as well as all your personal patch libraries.

As you can see, it is always possible to view two banks at a time. Select which banks to browse by clicking anywhere in the long red box above each one. You will be presented with 3 options: ‘Virus TI’, ‘Categories’ and ‘Personal Libraries’.

Those are located here:

Windows:
~\My Documents\Access-Music\Virus TI\Patches\

Mac:
/LibraryApplication Support/Access Music/Virus TI/Patches

'Virus TI' represents the RAM and ROM banks in the TI itself - since VirusControl always checks for any altered RAM patches at startup, you can be sure that RAM A-D will always reflect the exact status of the equivalent banks in the hardware.

'Categories' allows you to browse for patches by their assigned categories - just move the mouse pointer over a particular category and select one of the pages available.

'Personal Libraries' contains all of the banks you have collected in your Patches folder*. Any names with a little arrow to the right of them represent a sub-folder containing more libraries - hover the mouse over one of these to display another drop-down list.

*If you wish, you could easily download every Virus Patch ever published on the Access site, drop them into the Patches folder, and have instant access to them all via the Browser.

Selecting patches for auditioning

Double-click on a patch in either of the libraries to assign it to the currently active part.

Alternatively, you can drag/drop it into the patch name area in the Part column.

To copy a patch used by one part into another, click+hold the patch name in the original part, and drag/drop to the patch name of the destination part.

Some hosts allow key commands to be directed to plugins – if yours supports this function, once a patch has been selected, you can browse the rest simply by using the arrow keys on your computer keyboard.

Search

With the thousands of patches at your disposal, you'll no doubt be grateful that we included a Search function into the browser of VirusControl. To use it, simply click in the area to the right of the magnifying glass icon, and type in a string of letters. If you know the patch you're looking for, just type in the first few letters and press Enter - alternatively, you could try locating all the patches by your favourite sound-designer by typing in, say, "BC" for instance.

The results of your Search will be displayed in the browser pane, and if the return is greater than 128, any additional patches will be organised into temporary banks. To find them, click on the arrow in the browser bar and choose the 'Search Results' menu.

Tip: Any of these patches can be drag/dropped into another library to create a permanent, new compilation of your favourites.

Tip: Try searching random sequences of 2 or 3 letters - you might discover some great patches you'd otherwise have missed!

Saving Patches

There are two ways to save an edited patch:

- Click on the Save button by the patch name in the Part column. Choose a TI bank or user library and scroll to the slot you wish to overwrite.

- If you wish to save to one of the TI's RAM banks, open that bank in the browser, and simply drag/drop the patch from the Part onto the desired slot in the bank.

Note: When you save to a RAM location, the VirusControl informs the TI to store it internally as well, so you can be sure that the RAM banks in the VirusControl always represent their hardware counterparts.

Save as Multi

If you wish to transfer the patches of all 16 parts to the multi buffers: press STORE on the TI, select Destination = 'Multi Edit Buffer' with the Value 1 knob, and then press Store again. When you have disengaged the Virus Control, switch the TI to Multi mode, and Store to the desired Multi location.

Library Management

The fact that the browser allows two libraries to be viewed means you can effectively manage your patches by copying them from one to another.

Say, for instance, you wish to create a 'Favourites' bank in RAM A, first open up Virus TI>RAM A in the lower library. Now you can use the top library to browse your patch libraries, and drag/drop your favourite patches from these into the desired slots in RAM A.

How to make new libraries

- In the Virus TI/Patches folder, create a new folder called ‘My Patches’

- Copy/Paste the file ‘My Patches.mid’ to this folder

- Rename the copy e.g. ‘My Patches 1.mid’

- Repeat steps 2 and 3 as many times as required, incrementing the version number each time

- Use VirusControl to delete the patches in the additional copies.

Importing sounds from earlier Virus models

If you already own an older Virus synthesizer, you will probably want to use your favourite patches in the TI now.

The easiest way to do this is to transmit a Dump of each bank into your sequencer, and export each bank as a separate MIDI file (.mid). Once you have done this, place a copy of the .mid(s) in your Patches folder. When Virus Control is next started, the banks will appear in the Personal Libraries list.

You may well have accumulated large numbers of sounds in SoundDiver, of course. These should be exported in .mid format as well, but beware that Virus Control will only import banks of 128 sounds maximum - any surplus will be deleted! Please be sure to export your SoundDiver library patches in batches of no more than 128!

Exporting Sounddiver libraries

- Open a library within Sounddiver

- Select the patch/patches to be exported*

- Select File/Export as MIDI file

- Save the .mid file to the Patches folder

SoundDiver can be downloaded free of charge here:

http://www.access-music.de/?go=sdupdates

*If the selected patches do not have a patch location (e.g.‘A000’) assigned to them, they will not export. To assign a patch location, click the ‘E’ in the location field in the Parameters box (this must be enabled in View) and type in the desired location. Alternatively, you can drag/drop patches from the library into the RAM bank locations displayed in the Device window – this way the patches will automatically be assigned a location, and you can select the patches directly from there for exporting.

Re-organising patches within a library

There are a couple of ways you can change the exact location of patches within a RAM bank or library without overwriting any patches:

Sort Alphanumerically

Right-click (Mac = Alt+Click) within the bank and select ‘Sort alphanumeric’

Swap

Drag/drop a patch from one slot to another within the same bank – the patches at either location will swap places. It is also possible to swap blocks of different patches like this – Shift+Click on a second patch to select several continiguous patches and then drag/drop them all in one go. To select discontiguous patches, Ctrl+Click (Mac = Cmd+Click) on the patches you wish to select.

Copy

If you drag/drop patches from one library to another, this acts as a Copy function.

Hierarchical patch-management

It may be helpful to organise your libraries in separate folders within the Patches folder. The Virus Control will list them in a hierarchical manner when you click on the Libraries menu.

Renaming a patch

If you wish to rename a patch (RAM or user library only) you can do so by Alt+Click. The name will be highlighted blue, at which point you can type in your preferred patch name.

Deleting a patch

You can delete any number of patches from a user library by right-clicking on any selected patch and choosing ‘Delete selected patches’. Please note that it is not possible to do this with the RAM or ROM banks of the TI, hence the option is not available for these libraries.

Undo

If you make a mistake in the Browser, simply Right-click (Mac = Alt+click) anywhere within the libraries and select ‘Undo last operation’.

OSC Page

Here you will find all the parameters relevant to the oscillators as well as the mixer section of the Virus TI.

The two big dials represent Oscillators 1 and 2. The graphic in the centre of each represents the current waveform – grab it with the mouse and move it around to ‘morph’ between sine<>saw<>pulse. Notice how horizontal movements affect the width of the pulse wave – Click+Drag the little square in the Pulse Width display beneath the dial to adjust.

When the Shape dial is turned to the left of centre, the graphic underneath will display the currently selected ‘spectral’ wave. By dragging the wave vertically you can scroll quickly through all of the available waves – alternatively you can click on the little arrow beneath ‘Wave xx’ to open a list of all the waves.

When you switch the oscillator to HyperSaw mode, you will see some red vertical lines instead of the waveform. These represent the individual sawtooth waves within the HyperSaw oscillator – as you increase Density the number of lines increases toward the maximum of 9, and as you increase Detune Spread the lines move further apart. Try grabbing this graphic with the mouse and dragging it around – vertical movements affect Density, whilst horizontal movements affect Detune Spread. Try diagonal movements to adjust both at the same time!

In Wavetable mode, the graphic displays the name of the wavetable above the current Index position. Click+drag the wavetable name to scroll quickly through the tables, or click on the wavetable name beneath the dial to open a list of all available tables.

The abbreviation ‘Vel’, i.e. ‘Vel>Osc1’ is short for ‘Velocity’.

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For a full description of any parameter, simply manoeuvre the mouse pointer over it, and take a look at the Information Bar along the bottom of VirusControl.

If you wish to learn more about the functionality of a particular parameter, please refer to the Virus TI User Manual.

FILTER Page

This is where you will find all the controls relating to the filter (duh!) and the amplifier section.

The two large dials represent the filters of the Virus TI, with a graphical representation of the cutoff frequency and resonance level. Just like the equivalent control on the Easy Page, you can control Cutoff with the outer dial and Resonance with the separate, dedicated controller. Alternatively, you can grab the little red square with the mouse pointer and sweep both simultaneously - definitely the cooler option!

Click the little silver button between Env Amt and Vel to switch the polarity of the filter envelope modulation.

Grab and drag the keyboard graphic to adjust the keyfollow base key.

FILTER LINK button

This button links the Resonance, Env Amt and Keyfollow controls for both filters, whereby adjusting one snaps the equivalent parameter in the other filter to the same value. This is essentially the same as pressing both Filt1 and Filt1 Select buttons on the TI hardware.

Envelopes

There are two ways to adjust the envelope stages – you can either turn the knobs, or grab and drag the little red squares. Note that depending on which stage you wish to adjust you must drag the square either vertically or horizontally:

For a full description of any parameter, simply manoeuvre the mouse pointer over it, and take a look at the Information Bar along the bottom of VirusControl.

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If you wish to learn more about the functionality of a particular parameter, please refer to the Virus TI User Manual.

Step	Segment	Direction
1	Attack	Horizontal
2	Delay	Horizontal
3	Sustain	Vertical
4	Slope (Time)	Vertical
4	Release	Horizontal

LFO Page

Surprisingly enough, this is where you will find the controls for the Virus TI's 3 LFO's.

There are 3 ways in which you can select the waveform for each LFO:

1) Clicking on one of the buttons depicting the main waveforms

2) Click the name of the waveform and drag vertically

3) Click the picture of the waveform and drag verticallyClock mode can be enabled either by clicking the 'Clock' button, or by clicking CLK 'Off' and dragging vertically.

Clock resolution can be adjusted either by dragging the CLK value vertically, or by turning the rate dial.

LFO rate or clock resolution can also be adjusted by grabbing the number displayed within the rate dial and dragging vertically.

LINK button

These buttons link the two adjoined parameters so that their values synchronise when one or the other is adjusted.

For a full description of any parameter, simply manoeuvre the mouse pointer over it, and take a look at the Information Bar along the bottom of VirusControl.

If you wish to learn more about the functionality of a particular parameter, please refer to the LFO section.

MATRIX Page

Select up to 6 control sources to modulate up to18 destinations. Take the red pill - sorry, I mean click on the red bars to open the menus containing all possible sources and target parameters.

If you wish to learn more about the functionality of the various controller sources and available targets, please refer to the Mod Matrix Section in this User Manual.

ARP Page

This is the page where you can adjust all of the parameters relating to the arpeggiator. You can also create your own custom arpeggiator pattern per patch.

Pattern Editor

The pattern editor controls only become active when you select “Pattern = User”.

The vertical red bars represent the active steps of the pattern – in the default User pattern, we have activated alternate (odd-numbered) steps only. The numbered buttons above each bar are used to toggle each step on or off – those that are on are highlighted in red.

The height of the bar represents the velocity value, with the width of the bar representing the length of the step.

There are two ways to adjust Velocity for each step:

1) Adjust the knob above the step

2) Click on the bar itself and drag vertically

Likewise, there are two ways to adjust the Length of each step:

1) Adjust the knob below the step

2) Click on the bar and drag horizontally

It is important to understand that the length of a step is not absolute, but relative to the proximity of the next active step. Therefore, when you deactivate the steps ahead of any given step, you will see the width of the bar increase accordingly. To ensure a ‘legato’ effect between this and the next step, increase its length to maximum.

“End”

To create patterns less than the default 32 steps, drag the ‘End’ tab to the desired location. For instance, if you want a 16-step pattern, place the ‘End’ tab between steps 16 and 17.

For a full description of any parameter, simply manoeuvre the mouse pointer over it, and take a look at the Information Bar along the bottom of VirusControl.

If you wish to learn more about the functionality of a particular parameter, please refer to the Virus TI User Manual.

FX Page

'F'….'X' – sounds like 'Effects', doesn't it? How clever is that?! Needless to say, this is where we thought it would make sense to put all the controls for the Effects section of the Virus TI.

For a full description of any parameter, simply manoeuvre the mouse pointer over it, and take a look at the Information Bar along the bottom of VirusControl.

If you wish to learn more about the functionality of a particular parameter, please refer to the Effect section in this manual.

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COMMON Page

Here you will find all the performance parameters, such as Poly/Mono, Pitch Bend range etc. as well as the current version info.

Main Out

Click to select the output channel for the currently selected part – you can select between the 2 stereo USB outputs, or the 3 stereo analog outputs* of the Virus TI.

*If you use the analog outs (Out1/2/3L+R) the audio signal from the TI is no longer sent to your sequencer. If you wish to render your TI tracks to audio in the same way as your other plugins, you must use the USB outs.

Please note that you cannot use the additional outs for the soundcard functionality, since this would require more bandwidth than is available.

For a full description of any parameter, simply manoeuvre the mouse pointer over it, and take a look at the Information Bar along the bottom of VirusControl.

REMOTE Page

Here is where you can create templates which will allow you to remote control your favourite plug-ins and other hardware synths using the knobs of your Virus TI. There are 32 locations in the TI for storing templates – we have included a full bank containing ready-made templates for some of the most popular plug-ins to get you started. To access the Remote page, you will first need to click on Patch/Utility at the top right of the GUI.

It is only necessary to use the VirusControl to create new templates or load in new ones from additional libraries – Remote mode is fully functional in standalone mode.

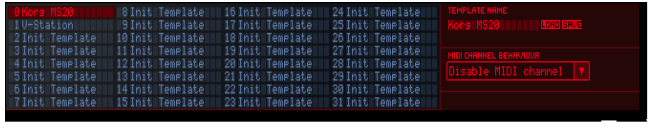
Please check www.acccess-music.de for new templates – we will be adding to the public library regularly. If you create any new templates and are happy to share them with other users, please send them to support@access-music.de

Remote Mode

In order to use the TI's Remote functionality, you must first switch it into Remote Mode. To do this, press SHIFT+CONFIG.

Selecting a Template

To select a remote template, double-click on one of the 32 templates listed at the top of the Remote page. These represent the templates which are currently stored in the TI's internal RAM.



If you wish, you can now click the LOAD tab and select a template from the available libraries on your computer's hard drive – the one you select will over-write the currently selected template.

Creating a Remote Template

1) Select a template.
2) Click on a knob
3) Name the knob (click in the Knob Name field)
4) Type in the MIDI string for the parameter you wish to control
5) Name the template (click in the Template Name field)
6) Repeat with remaining knobs as required
7) Save (click on Save tab and choose location)

How to write a MIDI string

Firstly, you will need to consult the user manual of the 3rd party plug-in you wish to control remotely, in order to find the controller numbers for each parameter.

Let's say that you want to assign the Cutoff knob of the TI to control Cutoff in the plug-in, which according to it's user manual, has MIDI number 70 assigned to it. In this case, type the following into the MIDI STRING field in the REMOTE page:

B0 %70 * (with spaces)

Basically, 'B0' makes it a MIDI CC command, where 0 = MIDI channel 1 (the 16 channels are numbered 0-15). '%70' makes it controller number 70, and '*' tells it to use the value of the assigned knob. Don't worry if you don't understand the alien language – it works, and once you've done it, it's easy!

Press Enter on the computer keyboard to confirm the text.*

*When you press Enter to confirm the MIDI String, the text will be altered to a hexadecimal number – please don't worry about this either! The exact description of the current knob behaviour can be seen below the MIDI string text field.

Assigning the Soft (Value) Knobs

A nice little bonus of the TI's display is that the names you give the 3 Soft Knobs will appear in the display.

MIDI Channel Behaviour

Select whether or not the controller messages are sent to the specific channel as determined by the MIDI string, or whether this part of the string is ignored, and the messages are sent to the currently selected channel.

General Hints and Tips

Pre-roll

As with other VSTi's/Audio Units, it is advisable to insert one or two bars of silence at the beginning of any song in which they are the first thing to be heard. This way you can ensure the first notes always plays perfectly.

'Latency-free' monitoring

If, even after setting your latency as low as your system will allow, you still find the response is not fast enough for you, try setting the part's Main Out (Common Page) to Out1 L+R. This way the USB audio is bypassed for this part, and you will be able to play and/or record with no perceptible latency. Once you have recorded the part, you should return the Main Out to a USB port, otherwise this part will be played back ahead of the beat due to the sequencer's delay compensation.

Bouncing or Freezing other plugins or audio tracks

If you wish to bounce/freeze other plugins or audio parts faster than realtime, we recommend you bypass the Virus Control plugin before doing so.

Tutorials

A range of setup tutorials can be found on the Access Music homepage and on the installer CDROM which comes with your Virus TI. Those tutorials usually consist of a demo session along with a written description on how to get the best out of the totally integrated Virus and your favourite sequencer host.

Note: Some older installer CDROMs might not contain all tutorial files and sessions.

4: Sound Parameters Reference

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ARP

ARP is short for Arpeggiator, a clocked processor that normally takes a chord and outputs individual notes, one after the other. The Arpeggiator in your Virus also features repeated chords, preset and custom rhythmic patterns, shuffle, infinite hold etc.

>PANEL CONTROLS

EDIT

Opens the Arpeggiator menu (see opposite).

ARP ON

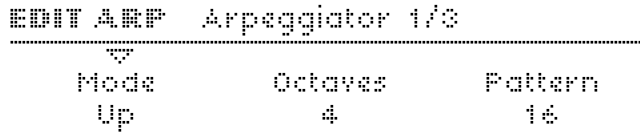
Toggles the arpeggiator on and off.

HOLD

Via SHIFT + ARP ON. Toggles the Hold function (see “Hold” on page 78).

>EDIT MENU

Arpeggiator



Mode

- **Off:** No arpeggiation. No other arpeggiator parameters will be visible.
- **Up:** Ascending notes, starting with the lowest note
- **Down:** Descending notes, starting with the highest note
- **Up+Down:** Ascending then descending notes, starting with the lowest note
- **As Played:** In the same order as received MIDI notes
- **Random:** Random note order, random octave (see Octaves parameter below)
- **Chord:** Plays all entered notes at the same time.

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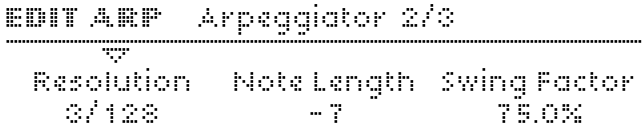
Octaves

> **1 to 4:** Notes can be successively transposed up an octave at the start of each new arpeggio cycle. The value here is equal to the number of cycles before the arpeggio reverts to its original pitch – so a value of 1 means no transposition.

Pattern

> **User, 2 to 64:** Selects the arpeggiator pattern. A “User” pattern can be created for each program using the VirusControl application (see “VirusControl” on page 145). As well as positions and lengths, most patterns contain extra velocity data for added rhythmic effect. To apply velocity data, set the Velocity parameters (see “Velocity Map” on page 132) or use the modulation matrix (see “MATRIX” on page 79) with Velocity as the source. Modulation destination “Arp Pattern”.



Resolution

> **1/128 to 1/2:** The Arpeggiator’s rate expressed as a fraction of a bar in 4/4 time. The minimum rate is therefore one complete arpeggio every 4/4 bar. The standard setting is 1/16 (i.e. 16 beats per bar), and normally does not need to be changed. The actual rate is determined by the Tempo parameter – see “Tempo” on page 129.

Note Length

> **-64 to +63:** Scales the lengths (hold time) of all notes. Negative values shorten the notes, positive values lengthen them. The audible effect of this parameter is highly dependant upon the envelope settings.
Modulation destination “Arp Note Length“.

Swing Factor

> **Off, 50.2% to 75.0%:** Affects the position (in time) of every other 16th note. At 66% the rhythm is “full swing” i.e. triplets. The values 16C, 16D, 16E and 16F are the same as those in Apple Logic (a popular sequencer program). Note: Swing will not affect the original “User” Pattern because this is made up of steady 8th notes only. Modulation destination “Arp Swing“.

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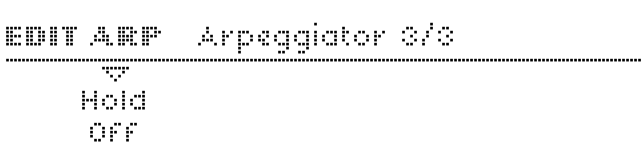

Hold

Accessible from the panel via SHIFT + ARP ON.

> **Off:** The arpeggio stops as soon as all notes are released

> **On:** The arpeggio continues after notes are released. Playing new notes after releasing all previous ones resets the arpeggio (i.e. the original notes disappear). Note that releasing a Hold pedal will stop the arpeggio until new notes are played.

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MATRIX

The modulation matrix is used for custom control routing. Six sources can be routed to three destinations each. Available sources include the internal envelopes and LFOs as well as most MIDI controllers, channel pressure (aftertouch) etc.. The list of destinations includes almost every Single Mode parameter in the Virus.

>PANEL CONTROLS

DESTINATION

This pair of buttons is used for up-and-down cursor control within the menu (required because each page displays all three destinations and amounts at once). Either of the DESTINATION buttons will open the menu if it is not already open...

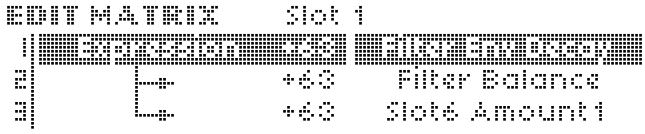
SELECT

Opens the modulation matrix menu. If pressed again, moves on to the next slot (SHIFT + SELECT will move to the previous slot). Alternative navigation: use the PARAMETERS buttons.

>SELECT MENU

Slot

The information below applies to any slot in the matrix. Use the DESTINATIONS buttons to move the cursor up and down.



Source

(VALUE 1 knob)

> **Off, Pitch Bend ... Random:** Specifies the modulation source (envelopes, LFOs, MIDI controllers etc.). This source can be simultaneously routed to a maximum of three destinations per slot.

Amount

(VALUE 2 knob)

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> **-64 to +63:** Modulation amount for the specified destination. The range is bipolar so that modulation can be inverted, and amounts are internally doubled so that unipolar destinations can be modulated over their entire range (i.e. 128 values). The Amount itself can be controlled by another modulation source – modulation destination is e.g. “Slot4 Amount2”.

Destination

(VALUE 3 knob)

> **Off ... Wavetable 2 Index:** Specifies a destination parameter. Use the DESTINATION buttons to move the cursor up and down.

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MODULATORS

Traditionally, LFOs (low frequency oscillators) are used for cyclic modulation e.g. vibrato, tremolo etc.. Alternatively, two of the three LFOs in the Virus can serve as simple envelopes (see “Envelope Mode” on page 83), so the label “Modulators” seems more appropriate than “LFOs” for this section.

Note that each LFO in the Virus has a different set of preset destinations, and that LFO3 allows just one destination to be selected.

> PANEL CONTROLS

EDIT

Opens the LFO menu corresponding to the selected LFO (see SELECT below). Selecting a different LFO after opening this menu will jump directly to the menu for the newly selected LFO.

ENV MODE

Toggles the Envelope Mode parameter on and off (see “Envelope Mode” on page 83).

SHAPE

Quick selection of Sine, Triangle, Sawtooth, Square or WAVE – the waveform specified in the Edit menu (see “Shape” on page 82).

RATE

Controls the speed of the currently selected LFO (see “Clock” on page 82 and “Rate” on page 82).

LFO CONTOUR

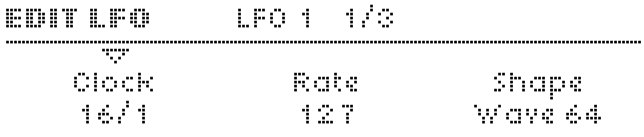
Via SHIFT + RATE. Continuous control over LFO waveform (see “Contour” on page 83).

SELECT

These buttons are used to switch between the three LFOs – the upper row of controls (ENV MODE, SHAPE and RATE) will apply to the selected LFO only. Pressing an already active SELECT button will jump into the LFO destinations menu, and pressing it repeatedly will step through the pages.

>EDIT MENUS

LFO 1



Clock

Accessible from the panel via the RATE knob if a value is defined here.

> **Off:** LFO1 is not synchronized.

> **1/64 ... 16/1:** LFO1 rate is synchronized to the Clock, expressed as a fraction of one bar in 4/4 time. See “Tempo” on page 129.

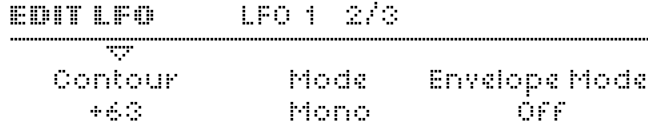
Rate

Accessible from the panel via the RATE knob if “Clock” is set to Off.

> **0 to 127:** The speed of LFO1 when not synchronized (see “Clock” above). Modulation destination “LFO1 Rate“.

Shape

> **Sine, Triangle, Sawtooth, Square, S&H, S&G, Waves 3 to 64:** Specifies the LFO waveform. If S&H, S&G or one of the additional waves is selected, this can be accessed directly from the panel via the SHAPE button (select “WAVE”). If Sine, Triangle, Sawtooth or square is selected here, the status LEDs will move accordingly.



Contour

Accessible from the panel via SHIFT + RATE.

> **-64 to +63:** Continuous control over LFO waveform. Modulation destination “LFO1 Contour“.

SHAPE	NEGATIVE	POSITIVE
Sine	to Triangle	to Square
Triangle	to falling Saw	to rising Saw
Saw	concavity	convexity
Square	pulse width <50%	pulse width >50%
S&H	---	---
S&G	---	---
3 to 64	zoom into wave	---

Mode

> **Poly:** Each voice has its own LFO, and these are slightly detuned against each other.

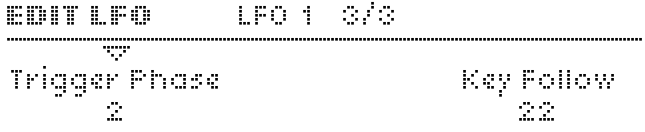
> **Mono:** All voices share a common LFO. Only applies if the parameters Envelope Mode and Trigger Phase (see below) are both set to “Off”.

Envelope Mode

Accessible from the panel via the ENV MODE button.

> **Off:** Standard (cyclic) LFO mode.

> **On:** The LFO effectively becomes an additional Envelope. LFOs in Envelope Mode are unipolar (see glossary) and stop after completing exactly one cycle. The start/finish point within the wave can be specified via Trigger Phase...



Trigger Phase

> **Off, 1 to 127:** When set to Off, LFO1 runs freely i.e. its phase is not reset by every note played (except in Envelope Mode). All other values set the starting point within the wave.

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Key Follow

> **Off, 1 to 127:** How much LFO1 rate (see “Rate” on page 82) is affected by MIDI note number. Note that Key Follow does not apply when LFOs are in Envelope Mode (see “Envelope Mode” on page 83) or are synchronized to the Clock (see “Clock” on page 82).

LFO 2

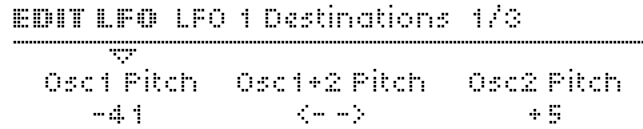
All edit parameters for LFO2 are the same as those for LFO1 – see “LFO 1” on page 82.

LFO 3

The edit parameters for LFO3 are the same as those for LFO1, except that Contour, Envelope Mode and Trigger Phase are not available in LFO3. See “LFO 1” on page 82.

>SELECT MENUS

LFO 1 Destinations



Osc1 Pitch

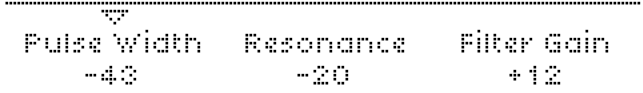
> **-64 to +63:** How much LFO1 modulates oscillator 1 pitch. Modulation destination “LFO1>Osc1 Pitch“.

Osc1+2 Pitch

> **-64 to +63:** How much LFO1 modulates the pitch of all oscillators, controlling the other two values in this page at the same time.

Osc2 Pitch

> **-64 to +63:** How much LFO1 modulates oscillator 2 pitch. Note that oscillator 3 automatically follows any pitch modulation applied to oscillator 2. Modulation destination “LFO1>Osc2 Pitch“.



Pulse Width

> **-64 to +63:** How much LFO1 modulates the pulse width of both main oscillators. Modulation destination “LFO1>Pulse Width”.

Resonance

> **-64 to +63:** How much LFO1 modulates the resonance of both filters. Modulation destination “LFO1>Resonance“.

Filter Gain

> **-64 to +63:** How much LFO1 modulates the total level of all signals before entering the filters. Modulation destination “LFO1>Filter Gain“.

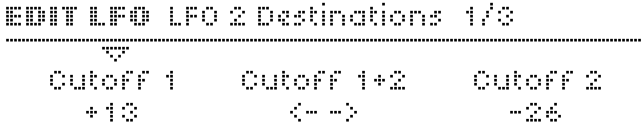
Assign Target

> **Off, Amp Env Attack ... WaveTable 2 Index:** Select from a list of available destinations for LFO1.

Amount

> **-64 to +63:** How much LFO1 modulates the Target parameter. Modulation destination “LFO1 Assign Amt“.

LFO 2 Destinations



Cutoff 1

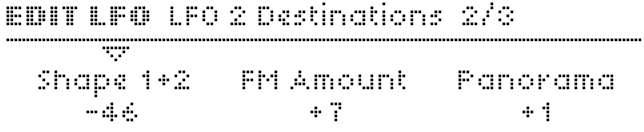
> **-64 to +63:** How much LFO2 modulates filter 1 cutoff frequency. Like automating the CUTOFF knob when Cutoff Link (see “Cutoff Link” on page 145) is switched off. Modulation destination “LFO2>Cutoff1“.

Cutoff 1+2

> **-64 to +63:** How much LFO2 modulates filter 1 and filter 2 cutoff frequencies simultaneously, controlling the other two values in this page. Like automating the CUTOFF knob when Cutoff Link (see “Cutoff Link” on page 145) is switched on and CUTOFF 2 is set to 0.

Cutoff 2

> **-64 to +63:** How much LFO2 modulates filter 2 cutoff frequency. Like automating the CUTOFF 2 knob. Modulation destination “LFO2>Cutoff2“.



Shape 1+2

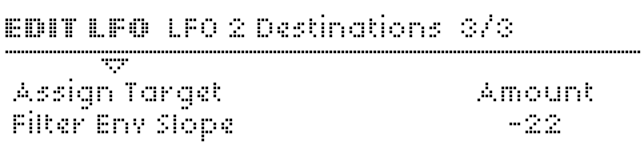
> **-64 to +63:** How much LFO2 modulates the shapes of oscillators 1 and 2 simultaneously. Like automating the SHAPE knob for both these oscillators at the same time. Modulation destination “LFO2>Shape“.

FM Amount

> **-64 to +63:** How much LFO2 modulates the amount of frequency modulation. Like automating the FM AMOUNT knob. Modulation destination “LFO2>FM Amount“.

Panorama

> **-64 to +63:** How much LFO2 modulates the position of the signal across the stereo outputs. Like automating the PANORAMA knob (SHIFT + OSC BALANCE). Modulation destination “LFO2>Panorama“.



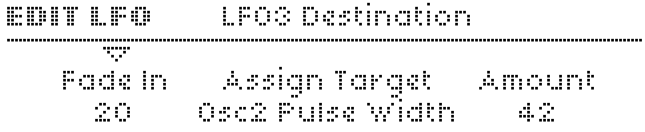
Assign Target

> **Off, Amp Env Attack ... WaveTable 2 Index:** Selects one of the many possible destinations for LFO2.

Amount

> **-64 to +63:** How much LFO2 modulates the specified Assign Target (see above). Modulation destination “LFO2 Assign Amt“.

LFO 3 Destination



Fade In

> **0 to 127:** The amount of LFO3 can be faded in after each note is played: 0 = instantaneous, 127 = about 40 seconds. Particularly useful for delayed vibrato effects etc..

Assign Target

Unlike LFO1 and LFO2, LFO3 has only one modulation slot, offering a choice of **one** of the following targets:

> **Osc1 Pitch:** Oscillator 1 pitch.

> **Osc1+2 Pitch:** The pitch of all oscillators.

> **Osc2 Pitch:** Oscillator 2 pitch. Note that oscillator 3 automatically follows any pitch modulation applied to oscillator 2.

> **Osc1 Pulse Width:** The pulse width of oscillator 1.

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- **Osc1+2 Pulse Width:** The pulse width of both oscillators at the same time.
- **Osc2 Pulse Width:** The pulse width of oscillator 2.
- **Sync Phase:** When Sync is switched on (see “SYNC” on page 110), this defines the absolute phase of oscillator 2 each time it is reset by oscillator 1. Modulating Sync Phase can cause effects similar to pulse width modulation, thus giving the (typically rather cold) sync-sounds more warmth.

Amount

- **0 to 127:** How much LFO3 modulates the selected target. Note that, unlike the other LFOs, this is a unipolar parameter. Modulation destination “LFO3 Assign Amt“.

EFFECTS (upper row)

The upper half of the Effects section is responsible for delay, reverb and 3-band equalisation, all of which can be applied simultaneously.

>PANEL CONTROLS

SELECT

Determines whether the three knobs apply to DELAY, REVERB or one of the EQ bands, and which menu will appear when the EDIT button is pressed once.

EDIT

Opens the menu for DELAY, REVERB or one of the EQ bands, depending upon which of these is currently selected.

SEND, EQ GAIN

If DELAY or REVERB is selected, this is an effect send control (dry/wet mix). If one of the EQ bands is selected, this knob controls the Gain parameter.

TIME / COLOR, EQ FREQ

If DELAY or REVERB is selected, this is usually a Time control. However, if one of the synchronized modes is selected (see “Clock” parameters below), it controls the Coloration parameter instead. If an EQ is selected, it controls the Frequency parameter.

FEEDBACK / DAMPING, EQ Q-FACTOR

If DELAY is selected, this is a feedback control. The same applies for REVERB modes with feedback (see “Mode” on page 92), otherwise it is a Damping control (see “Damping” on page 93). If the MID EQ band is selected, it controls the MID EQ Q-Factor (see “Q-Factor” on page 94). If LOW or HIGH EQ is selected, this knob is inactive.

SHIFT+TIME/COLOR as well as SHIFT+FEEDBACK/DAMPING will control the “other” parameter if both are available in the selected effect.

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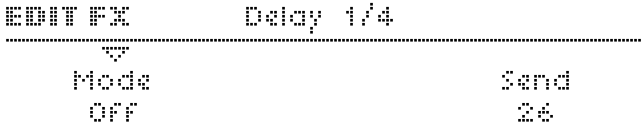
Delay



Mode

> **Off:** No Delay effect.

> **Simple Delay:** Standard delay effect, the left and right channels have the same nominal delay times.

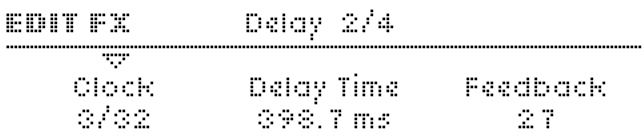
> **Ping Pong 2:1 ... Ping Pong 8:7:** The left and right channels have different delay times, indicated by the ratio.

> **Pattern 1+1 ... Pattern 5+5:** The left and right channels can have different delay times. Pattern modes are always synchronized to the Clock. The TIME / COLOR knob controls the Coloration parameter (see “Coloration” on page 91).

Send

Accessible from the panel via the SEND knob.

> **Dry, 1 to 126, Wet:** Effect send – actually a crossfade i.e. the overall level remains fairly constant (the dry signal is faded out at higher values). Modulation destination “Delay Send“.



Clock

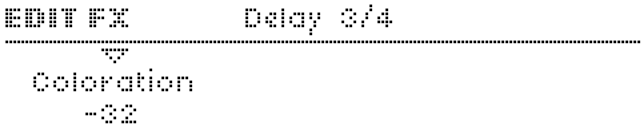
> **Off, 1/64 ... 3/4:** Synchronized delay rate expressed as a 4/4 bar division. Although not labelled as such, this parameter (or Delay Time – see below) is available from the panel via the TIME / COLOR knob.

Delay Time

> **0.0 ms to 693.6 ms:** Non-synchronized delay expressed in milliseconds. This values is used if Clock (see above) is set to Off. Available from the panel via the TIME / COLOR knob. Modulation destination “Delay Time”.

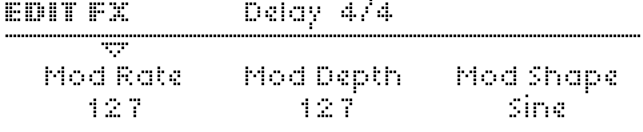
Feedback

> **0 to 127:** For repeated delays. Determines how much of the output signal is fed back into delay input, affecting the number of audible repeats. Modulation destination “Delay Feedback“.



Coloration

> **-64 to +63:** Applies progressive filtering within the feedback path (see “Feedback” above). Negative values make repeats successively mellower, whereas positive values make them brighter. Modulation destination “Delay Coloration”.



The Delay effect has its own dedicated LFO for modulating the delay time. Note that this can cause interesting pitch modulation and stereo effects.

Mod Rate

> **0 to 127:** The speed of the delay LFO. Modulation destination “Delay Mod Rate“.

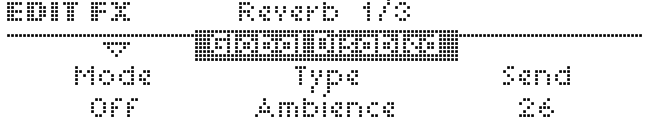
Mod Depth

> **0 to 127:** The amount of modulation applied to Delay Time by the delay’s own LFO. Note that the left and right channels are affected differently, so this parameter can be used to create stereo effects.
Modulation destination “Delay Mod Depth”.

Mod Shape

> **Sine, Triangle, Sawtooth, Square, S&H, S&G:** The delay LFO’s waveform. Use S&G for “tape echo” type effects.

Reverb



In the signal path, delay and reverb are routed in series i.e. the dry signal plus any delay is sent to the reverb input.

Mode

> **Off:** No effect. All other parameters will not be visible.

> **Reverb:** Standard reverb effect with predelay (see “Predelay” parameter below).

> **Feedback 1:** Reverb effect with a feedback loop in the predelay line, thus allowing multiple reverb tails.

> **Feedback 2:** The same as Feedback 1, except that the first reverb tail appears immediately.

Type

> **Ambience, Small Room, Large Room, Hall:** Different types of room simulations, in order of size. This parameter affects the so-called “early reflections”.

Send

Accessible from the panel via the SEND knob.

> **Dry, 1 to 126, Wet:** Effect send. Actually a cross-fade between dry and wet – the overall level remains fairly constant. Modulation destination “Reverb Send”.

Clock

> **Off, 1/64 ... 3/4:** Used to synchronize Predelay to the Clock (see “Predelay” below). Expressed as a 4/4 bar division.

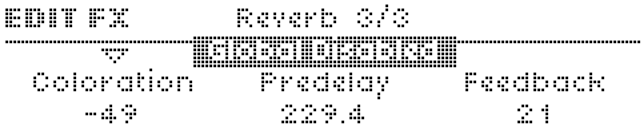
Time

Accessible from the panel via the TIME / COLOR knob

> **0 to 127:** The length of the reverb tail. Modulation destination “Reverb Time”.

Damping

> **0 to 127:** For simulating different surface materials by progressively removing higher frequencies. Carpets and drapes etc. tend to absorb a lot of high frequencies, while tiled floors and walls do not. Modulation destination “Reverb Damping”.



Coloration

> **-64 to +63:** Post-EQ for the reverb signal. Negative values are mellower, positive values are brighter. Modulation destination “Reverb Coloration”.

Predelay

Only visible if the Clock parameter is set to Off (see above).

> **0.0 ms to 300.4 ms:** The time between the original signal and the reverb signal, expressed in milliseconds. This can be fed back for multiple reverb tails (see “Mode” on page 92). Modulation destination “Reverb Predelay“.

Feedback

Only visible in Feedback 1 or Feedback 2 modes.
Accessible from the panel via the FEEDBACK knob.

> **0 to 127:** How much of the reverb signal is fed back into it’s own input. The repeat rate is determined by the Predelay parameter (see “Predelay” above). Modulation destination “Reverb Feedback”.

Low EQ

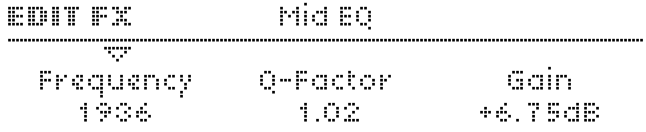
Frequency

> **32 to 458:** Low shelf (1 pole) cutoff frequency in Hertz.

Gain

> **-16 dB to +16 dB:** Low shelf cut or boost.

Mid EQ



Frequency

> **19 Hz to 24.0 kHz:** Centre frequency of the MID EQ. Values above 10,000 are given in kHz.
Modulation destination “EQ Mid Frequency”.

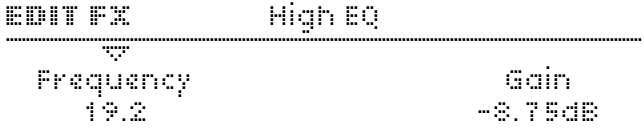
Q-Factor

> **0.28 to 15.4:** Bandwidth around the centre frequency. Low values are wider, high values are narrower. For wah-wah effects, set very high Q-Factor and Gain values, then modulate “EQ Mid Frequency”.
Modulation destination “EQ Mid Q-Factor”.

Gain

> **-16dB to +16dB:** Mid frequency cut or boost, in decibels.
Modulation destination “EQ Mid Gain”.

High EQ



Frequency

> **1831 to 24.0:** High shelf (1-pole) cutoff frequency in Hertz (values above 10,000 are given in kHz).

Gain

> **-16 dB to +16 dB:** High shelf cut or boost.

EFFECTS (lower row)

The lower half of the Effects section offers distortion, analog boost, chorus and phasing effects, all of which can be applied simultaneously. Effects which involve audio input (Vocoder, Input Follower, Input Ring Modulator) are also available here (see EDIT below).

>PANEL CONTROLS

SELECT

Determines which effect the knobs will control, and which menu will appear when the EDIT button is pressed.

EDIT

Opens the menu for to the currently selected effect. Repeatedly pressing EDIT toggles between the audio input effects pages and the selected effect. See “Vocoder” on page 100, “Input Follower” on page 105 and “Input Ring Modulator” on page 106.

TYPE/MIX

If DISTORTION is selected, this controls the distortion Type (see below). If ANALOG BOOST is selected, it controls the frequency (see “Frequency” on page 97). If Chorus or Phaser is selected, it controls the Mix parameter (see e.g. “Mix” on page 97).

INTENSITY

If DISTORTION or ANALOG BOOST is selected, this controls the intensity parameter (see “Intensity” on page 97). If Chorus or PHASER is selected, it controls the feedback parameter (see “Feedback” on page 98 and “Feedback” on page 99).

>EDIT MENU

Distortion

The choice of “Distortion” effects in the lower EFFECTS section are similar those available in the FILTERS menu (see “Saturation” on page 140), but here they treat the signal as a whole, i.e. not each individual voice. The difference is particularly noticeable when playing chords.

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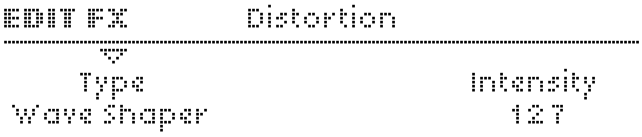

Type

Accessible from the panel via the TYPE/MIX knob

> **Off:** Distortion is disabled.

> **Light, Soft, Medium, Hard:** Four analog-style distortion curves with differing characteristics.

> **Digital:** Digital clipping. Can even turn a Saw wave into a square wave.

> **Wave Shaper:** A sinusoidal waveshaper, the effect of which is often similar to linear FM. Note that the results of the Shaper are highly dependant upon the signal level (see “OSC VOLUME” on page 137 and INTENSITY below).

> **Rectifier:** Full wave rectification with subsequent DC-compensation. See glossary.

> **Bit Reducer:** Variable reduction of bit-depth. For generating the digital quantization effects typical of early samplers and digital synthesizers.

> **Rate Reducer:** Variable reduction of sampling rate. For generating the aliasing effects typical of early samplers and digital synthesizers.

> **Low Pass:** Single pole low pass filter for variable reduction of high frequencies. This effect is only included to ensure compatibility with older programs (early Virus models did not feature a dedicated EQ section).

> **High Pass:** Single pole high pass filter for variable reduction of low frequencies. Also included for compatibility reasons.

Intensity

Accessible from the panel via the INTENSITY knob.

> **0 to 127:** Generally determines the amount of effect. In the two filter models (see “Low Pass” and “High Pass” above), this is the cutoff frequency.
Modulation destination “Distortion Intensity“.

Analog Boost

Analog Boost can be used to emulate the frequency response of various real analogue synthesizers. Note that boosting bass frequencies will reduce the proportion of high frequencies in the resulting signal.

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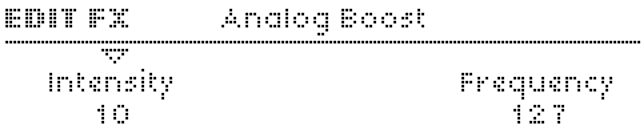


Intensity

Accessible from the panel via the INTENSITY knob.

> **Off, 1 to 127:** The degree of Analog Boost. Modulation destination “Analog Boost Int“.

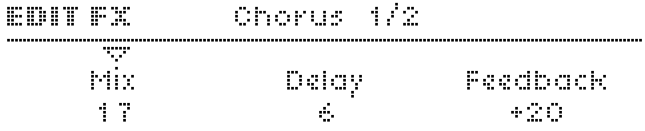
Frequency

Accessible from the panel via the TYPE/MIX knob. Only visible if Intensity is not set to Off.

> **0 to 127:** The frequency where Analog Boost is applied. Very high values will even boost mid-range frequencies.

Chorus

Typically, Chorus is a thickening effect caused by modulating a pair of very short delay lines via a dedicated LFO, then mixing this with the original dry signal. In combination with Feedback, the Chorus effect in your Virus is also capable of flanging, ensemble, vibrato or resonator effects. Note that if the Mix parameter is set to Off, the other parameters will not be visible in the menu.



Mix

Accessible from the panel via the TYPE/MIX knob

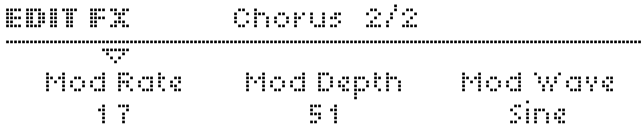
> **Off, 1 to 127:** Cross-fade between the dry and wet signal. Set this to 64 for maximum Chorus, or to 127 for a vibrato effects. If set to Off, none of the other parameters in this menu will be visible. Modulation destination “Chorus Mix“.

Delay

> **0 to 127:** The nominal delay time, modulated by a dedicated LFO (see “Mod Rate” etc. below). Very high values result in a short but noticable stereo delay effect. Modulation destination “Chorus Delay“.

Feedback

> **-64 to +63:** The amount of signal fed back into the Chorus input. The Feedback parameter is bipolar because positive and negative values have different tonal characteristics. Modulation destination “Chorus Feedback“.



Mod Rate

> **0 to 127:** Modulation rate – the speed of the dedicated LFO. Modulation destination “Chorus Mod Rate”.

Mod Depth

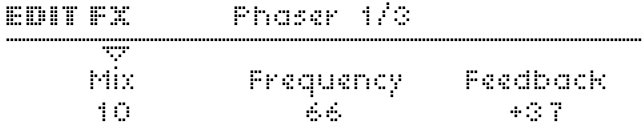
> **0 to 127:** How much the LFO modulates the Delay parameter. Modulation destination “Chorus Mod Depth“.

Mod Shape

> **Sine, Triangle, Sawtooth, Square, S&H, S&G:** Selects the waveform used to modulate the Delay parameter.

Phaser

Typically, phasing is the classic “whoosh” effect originally achieved by running two tape machines in parallel, then slightly changing the speed of one of them. The Virus phaser uses up to six “all-pass” filters to achieve a very similar effect. In combination with Feedback, the Virus phaser is also capable of resonator, ensemble, vibrato and flanging effects. Note that if the Mix parameter is set to Off, the other parameters will not be visible in the menu.



Mix

Accessible from the panel via the TYPE/MIX knob.

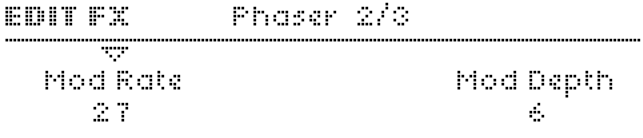
> **Off, 1 to 127:** Cross-fade between the dry and wet signal. Set this to 64 for normal phasing (together with zero Feedback - see below). Modulation destination “Phaser Mix“.

Frequency

> **0 to 127:** The average frequency of resonant peaks (see Spread below). Modulation destination “Phaser Frequency“.

Feedback

> **-64 to +63:** The amount of signal fed back into the Phaser input, causing a resonance effect. The Feedback parameter is bipolar because positive and negative values result in different tonal characteristics. Modulation destination “Phaser Feedback“.

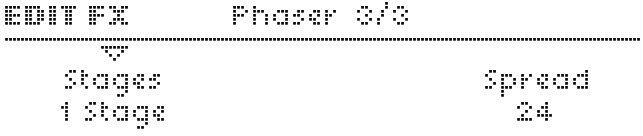


Mod Rate

> **0 to 127:** Modulation rate – the speed of the Phaser’s dedicated LFO (a triangle wave) used to modulate the Frequency parameter (see above). Modulation destination “Phaser Mod Rate“.

Mod Depth

> **0 to 127:** How much the Frequency parameter (see above) is modulated by the Phaser’s LFO. Modulation destination “Phaser Mod Depth“.



Stages

> **1 to 6:** The number of all-pass filters used in the Phaser. This value affects the complexity of the phased signal.

Spread

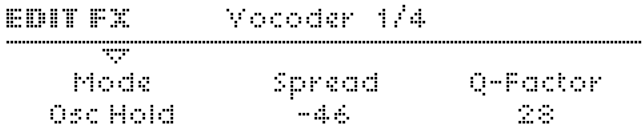
> **0 to 127:** How far apart the resonant peaks between multiple stages are. Modulation destination “Phaser Spread“.

Vocoder

To enter these pages, press EDIT (lower EFFECTS section) once or twice so that its LED flashes, then navigate using the PARAMETERS buttons. Although available as “effect”, the Virus Vocoder actually replaces the entire filter section i.e. Vocoder and normal filters cannot be used at the same time within a single program.

The Virus vocoder has two banks of up to 32 bandpass filters: One to analyse the frequency spectrum of a **modulator** audio signal (see “Input Select” on page 134), and the other to process a **carrier** signal (usually the internal oscillators) accordingly. Please refer to the “Vocoder Table” on page 104.

As well as the functions of a few knobs in the filter section, two of the parameters appearing in the first page of the vocoder menu are sensitive to SELECT status in the Filters section: If FILT1 is selected, carrier parameters will appear here. If FILT2 is selected, modulator parameters will appear.



Mode

Specifies the carrier signal...

> **Off:** The Vocoder is disabled, no other Vocoder parameters will be visible.

> **Oscillator:** The carrier is the entire oscillator section, including any noise.

> **Osc Hold:** Identical to “Osc” except that Hold mode (see “Key Mode” on page 122) is activated for the vocoder.

> **Noise:** The carrier is the noise signal only. The rest of the oscillator section is disabled, thus saving polyphony.

> **In L, In L+R, In R:** The carrier is one or both of the audio inputs.

Spread

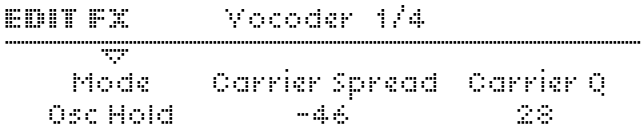
Available if both filter SELECT buttons are active. Accessible from the panel via the ENV AMOUNT knob.

> **-64 to +63:** Simultaneously controls Carrier Spread and Modulator Spread (see below).

Q-Factor

Only available if both filter SELECT buttons are active. Accessible from the panel via the RESONANCE knob.

> **-64 to +63:** Simultaneously controls Carrier Q and Mod Q (see below), overriding those two parameters.



Mode

See “Mode” on the previous page.

Carrier Spread

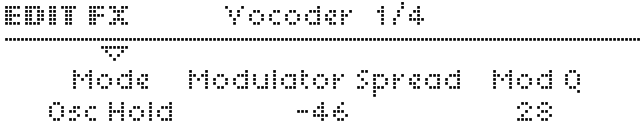
Accessible via the ENV AMOUNT knob when only FILT1 is selected.

> **-64 to +63:** How far apart individual Carrier bands are. The standard value is +63 (100% i.e. full range), negative values effectively invert the order of bands – great for special effects. Modulation destination “Filter1 Key Follow“.

Carrier Q

Accessible via the RESONANCE knob when FILT1 is selected.

> **0 to 127:** Quality (steepness) of the Carrier bands. Modulation destination “Filter1 Resonance“.



Mode

See “Mode” on the previous page.

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Modulator Spread

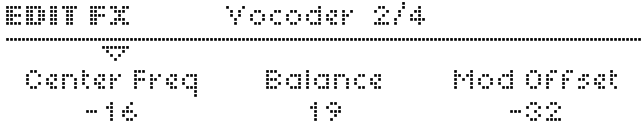
Accessible via the ENV AMOUNT knob in the FILTERS section when only FILT2 is active.

> **-64 to +63:** How far apart individual Modulator bands are. The standard value is +63 (full range), negative values effectively invert the order of bands. Modulation destination “Filter2 Key Follow“.

Mod Q

Accessible from the panel via the RESONANCE knob when FILT2 is selected.

> **0 to 127:** Quality (steepness) of the Modulator bands. Modulation destination “Filter2 Resonance“.



Center Freq

Accessible from the panel via the CUTOFF knob in the FILTERS section.

> **-64 to +63:** Centre frequency of the Carrier bank. Modulation destination “Filter1 Cutoff“.

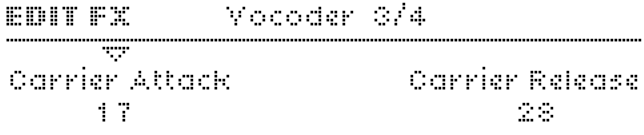
Balance

Accessible from the panel via the FILTER BALANCE knob.

> **-64 to +63:** Balance between the carrier and modulator signals. For pure vocoder signal, set this value to <0>. Modulation destination “Filter Balance“.

Mod Offset

> **-64 to +63:** Centre frequency offset of the modulator bank relative to the carrier bank. Modulation destination “Filter2 Cutoff“.

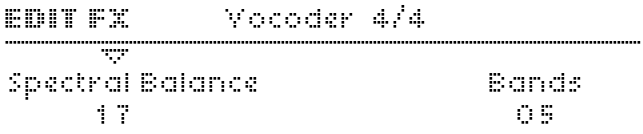


Carrier Attack

> **0 to 127:** Attack time of the carrier's own "envelope follower". Together with Carrier Release, this is used to smoothen the vocoded signal.

Carrier Release

> **0 to 127:** Release time of the carrier's envelope follower. Together with Carrier Attack, this is used to smoothen the vocoded signal.



Spectral Balance

> **0 to 127:** Balance between high and low frequencies in the vocoded signal. In effect, this parameter works like a simple equalizer, determining the overall colour of the vocoder output. Higher values can improve the clarity of speech. Modulation destination "Filter Env Slope".

Bands

> **1 to 32:** The number of filter bands used. The higher this number, the higher the quality (e.g. speech becomes more intelligible). Lower values are better for robot voices etc.. Modulation destination "Filter Env Release".

Vocoder Table

VOCODER PARAMETER	EQUIVALENT KNOB ON THE PANEL	MODULATION DESTINATION
Carrier Freq	CUTOFF	Cutoff 1
Mod Freq Offset	CUTOFF 2	Cutoff 2
Carrier Q	RESONANCE (FLT1 selected)	Filter 1 Resonance
Modulator Q	RESONANCE (FLT2 selected)	Filter 2 Resonance
Q Factor	RESONANCE (FLT1 & FLT2 selected)	Filter 1 Resonance
Carrier Spread	ENV AMOUNT (FLT1 selected)	Filter 1 Key Follow
Modulator Spread	ENV AMOUNT (FLT2 selected)	Filter 2 Key Follow
Spread	ENV AMOUNT (FLT1 & FLT2 selected)	Filter 1 Key Follow
Carrier Attack	Filter ATTACK	Filter Env Attack
Carrier Release	Filter DECAY	Filter Env Decay
Spectral Balance	SHIFT + Filter SUSTAIN	Filter Env Slope
Bands	Filter RELEASE	Filter Env Release
Balance	FILTER BALANCE	Filter Balance

Input Follower

To enter these pages, press EDIT (in the lower EFFECTS section) once or twice until the LED flashes, and navigate using the PARAMETERS buttons.

A modulation signal is extracted from the level of the selected input (see “Input Select” below) and replaces the filter envelope. To hear any effect, turn up ENV AMOUNT and/or use “Filter Envelope” as source in the Matrix.

Input Select

> **Off:** The Input follower is not used. The other parameters in this page will not be visible.

> **Left, L+R , Right:** Signal source for the envelope follower.

Attack

> **0 to 127:** Accessible from the panel via the filter ATTACK knob. Reaction time to sudden peaks in the input signal level. Used to regulate how smooth the resulting envelope will be. Modulation destination “Filter Env Attack“.

Release

> **0 to 127:** Accessible from the panel via the filter DECAY knob. Reaction time to sudden drops in the input signal level. Used to regulate how smooth the resulting envelope will be. Modulation destination “Filter Env Decay“.

Sensitivity

> **0% to 100%:** Accessible from the panel via the filter SUSTAIN knob. Controls the sensitivity of the envelope follower to its input signal (note that this parameter does not directly affect signal level). The standard value is 50%. Modulation destination “Filter Env Sustain“.

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Input Ring Modulator

To enter this page, press EDIT (in the lower EFFECTS section) until the LED flashes, and navigate with the PARAMETERS buttons.

The source specified by the Input Select parameter (see “Input Select” on page 134) can be ring-modulated with the oscillator signal:

Mix

> **Off, 1 to 63, Ringmod, 65 to 126, Input:** “Off” means no input ring modulation, other values determine the balance between the two signals: “1” is mostly the untreated oscillator signal, “Ringmod” is the ring-modulated signal only, and “Input” is the input signal only.

OSCILLATORS

The Virus has a total of five internal sound-generation sources: Three main oscillators, a sub-oscillator and a noise generator. The levels of these sources can be adjusted using the knobs in the MIX section (see “MIX” on page 137).

To enter the Common, Sub Oscillator, Noise and Ring Modulator pages of the OSCILLATORS section, press EDIT once or twice until its own LED flashes.

The Virus TI offers three fundamentally different oscillator modes: **Classic** (as in previous Virus models), **HyperSaw** (up to 9 layered, detunable Saw waves) and **WaveTable** (smoothly interpolated, additive waves).

About HyperSaw and Sync

Unlike Classic oscillators where oscillator 2 can be synchronized to oscillator 1, HyperSaws are always synchronized to their own inaudible “master” oscillator. In HyperSaw mode, the **FM AMOUNT** knob controls a frequency offset parameter instead, controlling how much higher the pitch of the oscillator is than its master. To differentiate this function from standard oscillator synchronization, it is called **HyperSync**.

Note that oscillator 1 allows HyperSync to be defeated via the SYNC button.

About HyperSaw and Sub Oscillators

Similarly, HyperSaw oscillators also have their own integrated sub oscillators – multiple square waves tuned an octave below the main oscillator. To differentiate these from the Classic sub oscillator, they are called **HyperSub**.

The **SUB OSC VOLUME** control in the MIX section cross-fades between the main HyperSaw oscillator and its HyperSub.

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Here is a table showing how oscillator mode selection determines what the SYNC button, the FM AMOUNT knob and SUB OSCILLATOR knobs actually do...

Osc 1 Mode	Osc 2 Mode	SYNC Button on	FM AMOUNT knob	SUB OSCILLATOR knob
Classic	Classic	Active sync	FM amount	Sub Oscillator volume
	Hypersaw		OSC2 HyperSync offset	Sub Oscillator volume Osc2 HyperSub mix
	Wavetable		FM amount	Sub Oscillator volume
Hypersaw	Classic	Activates Osc 1 HyperSync Activates sync	Osc1 HyperSync offset FM amount	Osc2 HyperSub mix
	Hypersaw	Activates Osc 1 HyperSync	Osc1 HyperSync offset Osc2 HyperSync offset	Osc1 HyperSub mix Osc2 HyperSub mix
	Wavetable	Activates Osc 1 HyperSync Deactivates FM	Osc1 HyperSync offset or FM amount	Osc1 HyperSub mix
Wavetable	Classic	Activates sync	FM amount	
	Hypersaw			Osc2 HyperSub mix
	Wavetable		FM amount	

SHAPE

Classic: Blends the waveforms available within each oscillator. See “Shape” on page 111.

HyperSaw: Controls the Density parameter – the number of sawtooth waves used. See “Density” on page 112.

WaveTable: Controls the Index parameter – the nominal position within the Table. See “Index” on page 114.

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MODE

Via SHIFT + SHAPE knob. Selects the type of oscillator (Classic Virus, HyperSaw or WaveTable).

WAVE SELECT/ PW

Classic: Either selects one of the 64 spectral waves or controls Pulse Width, depending on the current value of SHAPE. See “Wave Select or Pulse Width” on page 111 for details.

HyperSaw: Controls the Spread parameter. See “Spread” on page 112.

WaveTable: Selects a Table. See “Table” on page 114.

SEMITONE

Controls oscillator pitch (see “Semitone” on page 111). While turning the knob, pitch is automatically smoothed so that SEMITONE appears to be a continuous frequency control.

PORTAMENTO

Via SHIFT + SEMITONE. How slowly the pitch of one note glides to the next. This parameter is not available in the oscillators menu, but in the Master Edit menu. This is because it is also applied to filter frequency – see “Portamento” on page 122.

DETUNE 2/3

Fine-tunes either oscillator 2 upwards or oscillator 3 downwards, depending upon which oscillator is currently selected. See “Detune” on page 121.

UNISON DETUNE

Via SHIFT + DETUNE. Direct access to the “Unison Detune” parameter (also available in the Master edit menu – see “Detune” on page 131).

SELECT

Switches between the three oscillators so that the upper row of knobs (SHAPE, WAVE SELECT/ PW, SEMITONE and DETUNE 2/3) will apply to the newly selected oscillator. The status of SELECT also determines which menu will be opened when the EDIT button is pressed...

EDIT

Opens the ocillators menu for the currently selected oscillator. Pressing EDIT again toggles between this menu and parameters that are common to all oscillators (see “Common” on page 121) as well as Sub Oscillator, Noise and Ring Modulator settings.

OSC3 ON

Activates/deactivates oscillator 3. If oscillator 3 is not active, it will be skipped when pressing the SELECT button.
See “Oscillator 3” on page 120.

MONO

Toggles between the most recently selected “Mono” key mode (see “Key Mode” on page 122) and polyphonic operation. To step through all key modes, hold SHIFT and press MONO repeatedly.

SYNC

This activates/deactivates oscillator synchronization (oscillator 2 to oscillator 1) if oscillator 2 is in Classic mode. This button has no effect on oscillator 2 is in HyperSaw or WaveTable mode.

If oscillator 1 mode is a HyperSaw, switching SYNC on activates oscillator 1 HyperSync instead. See “About HyperSaw and Sync” on page 107.

PANIC

Via MONO + SYNC. Resets any “hanging” notes.

FM AMOUNT

Classic or WaveTable: Controls the intensity of frequency modulation.

HyperSaw: Controls the HyperSync Offset parameter i.e. tunes the HyperSaw oscillators upwards relative to their own (inaudible) sync oscillators. See “About HyperSaw and Sync” on page 107.

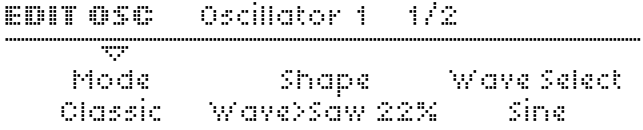
FM MODE

Via SHIFT + FM AMOUNT. Specifies the FM modulator source. See “FM Mode” on page 116.

>EDIT MENU

Oscillator 1 – Classic

The following information applies to oscillator 1 in Classic mode only.



Mode

Accessible from the panel via SHIFT + oscillator SHAPE knob.

> **Classic, HyperSaw, WaveTable:** Selects the basic type of oscillator.

Shape

Accessible from the panel via the SHAPE knob. Modulation destination “Osc1 Shape”.

> **Spectral Wave ... Sawtooth ... Pulse:** Waveform mix. At minimum, you will only hear one of the 64 spectral waves, at dead centre you will hear a pure Sawtooth, at maximum a pure Pulse wave. Set intermediate values for different mixtures (these are displayed as percentages).

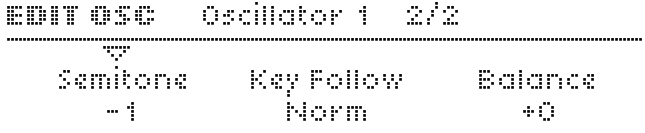
Wave Select or Pulse Width

Accessible from the panel via WAVE SELECT/ PW. Two distinct functions, depending on the value of the Shape parameter (see below): If Shape is anywhere below centre, WAVE SELECT/ PW will select a spectral wave. If SHAPE is set to “Sawtooth” or above, the WAVE SELECT/ PW knob will control pulse width instead...

> **Sine, Triangle, Waves 3 to 64:** Spectral Wave function. Modulation destination “Osc1 Wave Select“.

or

> **50.0% to 100%:** Pulse width function. Modulation destination “Osc1 Pulse Width“.



Semitone

Accessible from the panel via the SEMITONE knob.

> **-48 to +48 semitones:** The nominal pitch of oscillator 1. Modulation destination “Osc1 Pitch“.

Key Follow

> **-64 to +31, Norm, +33 to +63:** How much the pitch of oscillator 1 follows the keyboard (i.e. MIDI note number). Press both VALUE buttons at the same time for normal tuning (Norm).

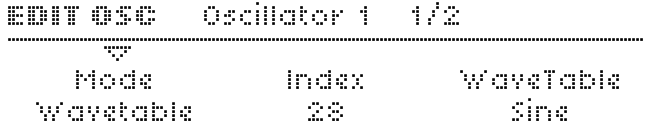
Balance

Accessible from the panel via the OSC BALANCE knob in the MIX section.

> **-64 to +63:** Adjusts the relative levels of oscillator 1 and oscillator 2 (including FM), whereby -64 is oscillator 1 only and +63 is oscillator 2 only. Note that this parameter is mirrored in the oscillator 2 menu. Modulation destination “Osc Balance”.

Oscillator 1 – HyperSaw

This information only applies to oscillator 1 in HyperSaw mode



Mode

Accessible from the panel via SHIFT + oscillator SHAPE.

> **Classic, HyperSaw, WaveTable:** Selects the basic type of oscillator.

Density

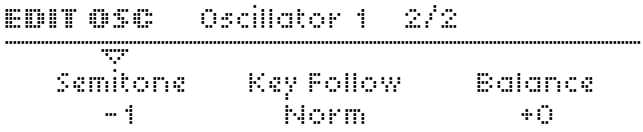
Accessible from the panel via the oscillator SHAPE knob.

> **1.0 to 9.0:** The number of sawtooth waves used. The volumes are cross-faded for completely smooth transitions. Modulation destination “Osc1 Shape“.

Spread

Accessible from the panel via WAVE SELECT/ PW.

> **0 to 127:** Detuning of individual sawtooth waves within the HyperSaw. Modulation destination “Osc1 Pulse Width”.



Semitone

Accessible from the panel via the SEMITONE knob.

> **-48 to +48 semitones:** The nominal pitch of oscillator 1. Modulation destination “Osc1 Pitch“.

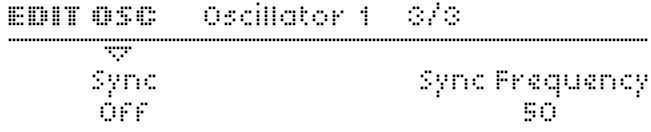
Key Follow

> **-64 to +31, Norm, +33 to +63:** How much the pitch of oscillator 1 follows the keyboard (i.e. MIDI note number). Press both VALUE buttons at the same time for normal tuning (Norm).

Balance

Accessible from the panel via the OSC BALANCE knob in the MIX section.

> **-64 to +63:** Adjusts the relative levels of oscillator 1 and oscillator 2 (including FM), whereby -64 is oscillator 1 only and +63 is oscillator 2 only. Note that this parameter is mirrored in the oscillator 2 menu. Modulation destination “Osc Balance”.



HyperSync

Accessible from the panel via the SYNC button.

> **Off, On:** Switches oscillator 1 HyperSync off/on. See “About HyperSaw and Sync” on page 107.

H-Sync Offset

Accessible from the panel via the FM AMOUNT knob.
If HyperSync (see above) is set to Off, this parameter will not be available.

> **0 to 127:** The frequency offset of any HyperSaw (both oscillator 1 or 2) with respect to its own internal “master” oscillator. Modulation destination “FM/HyperSync”.

Oscillator 1 – WaveTable

Mode

Accessible from the panel via SHIFT + oscillator SHAPE knob.

> **Classic, HyperSaw, WaveTable:** Selects the basic type of oscillator.

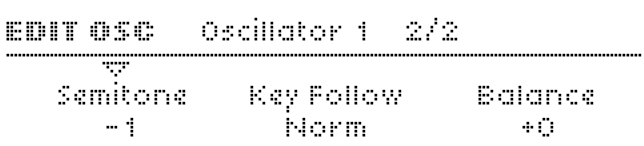
Index

Accessible from the panel via the SHAPE knob.

> **0 to 127:** Selects the nominal position within the WaveTable. Modulation destination “Wavetable 1 Index“ or “Osc1 Shape” (these are equivalent).

Table

> **Sine ... Violator:** Selects one of many wavetables.



Semitone

Accessible from the panel via the SEMITONE knob.

> **-48 to +48 semitones:** The nominal pitch of oscillator 1. Modulation destination “Osc1 Pitch“.

Key Follow

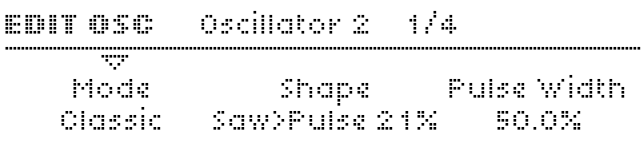
> **-64 to +31, Norm, +33 to +63:** How much the pitch of oscillator 1 follows the keyboard (i.e. MIDI note number). Press both VALUE buttons at the same time for normal tuning (Norm).

Balance

Accessible from the panel via the OSC BALANCE knob in the MIX section.

> **-64 to +63:** Adjusts the relative levels of oscillator 1 and oscillator 2 (including FM), whereby -64 is oscillator 1 only and +63 is oscillator 2 only. Note that this parameter is mirrored in the oscillator 2 menu. Modulation destination “Osc Balance”.

Oscillator 2 – Classic



Mode

Accessible from the panel via SHIFT + oscillator SHAPE.

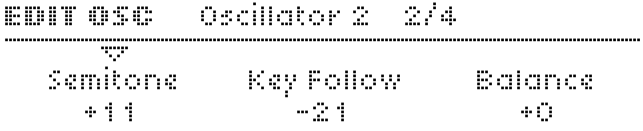
> **Classic, HyperSaw, WaveTable:** Selects the basic type of oscillator.

Shape

As in oscillator 1 – see “Shape” on page 111. Modulation destination “Osc2 Shape“.

Wave Select or Pulse Width

As in oscillator 1 – see “Wave Select or Pulse Width” on page 111. Modulation destination “Osc2 Wave Select“ or “Osc2 Pulse Width“.



Semitone

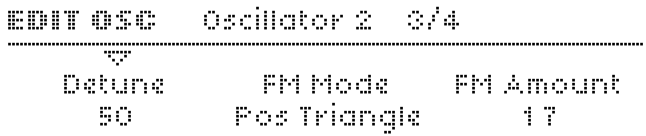
As in oscillator 1 – see “Semitone” on page 111. Modulation destination “Osc2 Pitch“.

Key Follow

As in oscillator 1 – see “Key Follow” on page 112.

Balance

Mirrors the Balance parameter in the oscillator 1 page – see “Balance” on page 112.



Detune

Accessible from the panel via the DETUNE 2/3 knob when oscillator 1 or 2 is selected.

> **0 to 127:** Fine-tunes oscillator 2 upwards. Modulation destination “Osc2 Detune“.

FM Mode

Specifies the source of FM modulation:

> **Pos Triangle:** Unipolar triangle wave from oscillator 1.

> **Triangle:** Bipolar triangle wave from oscillator 1.

> **Wave:** The selected wave from oscillator 1 (see “Wave Select or Pulse Width” on page 111).

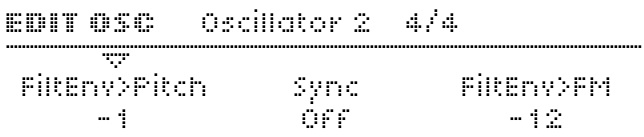
> **Noise:** The Noise signal.

> **In L, In L+R, In R:** One or both of the Audio inputs (see rear panel).

FM Amount

Accessible from the panel via FM AMOUNT.

> **0 to 127:** The intensity of frequency modulation. Modulation destination “FM/HyperSync“.



FiltEnv>Pitch

> **-64 to +63:** How much the filter envelope modulates the pitch of oscillator 2. This was implemented in previous Virus models to facilitate sync sweeps, and has been retained for compatibility reasons.
Modulation destination “FiltEnv>Osc2 Pitch“.

Sync

Accessible from the panel via the SYNC button.

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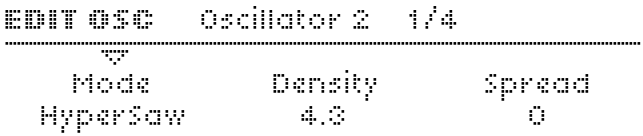
> **Off, On:** Activates/deactivates oscillator synchronization. Whenever oscillator 1 starts a new cycle, oscillator 2 resets its phase (see “Phase angle” in the glossary).

FiltEnv>FM

> **-64 to +63:** Controls how much filter envelope is applied to FM Amount. This was implemented in previous Virus models to facilitate FM sweeps, and has been retained for compatibility reasons. Modulation destination “FiltEnv>FM/Hsync“.

Oscillator 2 – HyperSaw



Mode

Accessible from the panel via SHIFT + oscillator SHAPE.

> **Classic, HyperSaw, WaveTable:** Selects the basic type of oscillator.

Density

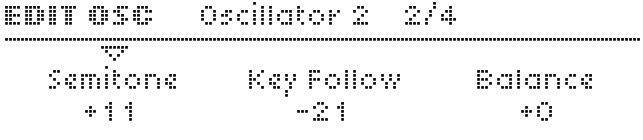
Accessible from the panel via the oscillator SHAPE knob.

> **1.0 to 9.0:** The number of sawtooth waves used. The volumes are cross-faded for completely smooth transitions. Modulation destination “Osc2 Shape“.

Spread

Accessible from the panel via WAVE SELECT/ PW.

> **0 to 127:** Nominal detuning between individual waves in the HyperSaw. Modulation destination “Osc2 Pulse Width“.



Semitone

As in oscillator 1 – see “Semitone” on page 111. Modulation destination “Osc2 Pitch“.

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Key Follow

As in oscillator 1 – see “Key Follow” on page 112.

Balance

Mirrors the Balance parameter in the oscillator 1 page – see “Balance” on page 112.

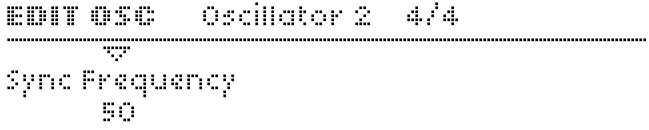
Detune

Accessible from the panel via the DETUNE 2/3 knob when oscillator 1 or 2 is selected.

> **0 to 127:** Fine-tunes oscillator 2 upwards. Modulation destination “Osc2 Detune“.

FiltEnv>Pitch

As in Classic mode – see “FiltEnv>Pitch” on page 116.

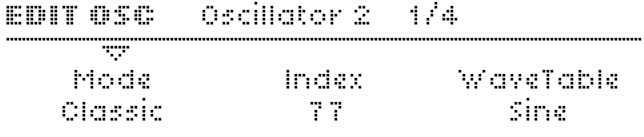


H-Sync Offset

Accessible from the panel via the FM AMOUNT knob. Note that this parameter is mirrored in the Common menu because it can apply to oscillators 1 and 2 at the same time – see “H-Sync Offset” on page 123

> **0 to 127:** The frequency offset of any HyperSaw (both oscillator 1 or 2) with respect to its own internal “master” oscillator. Modulation destination “FM/HyperSync”.

Oscillator 2 – WaveTable



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Mode

Accessible from the panel via SHIFT + oscillator SHAPE.

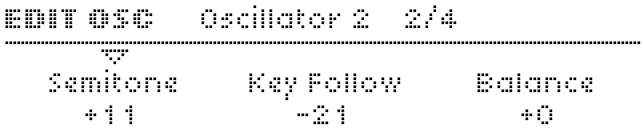
> **Classic, HyperSaw, WaveTable:** Selects the basic type of oscillator.

Index

> **1 to 127:** Selects the nominal position within the WaveTable. Modulation destination “Wavetable 2 Index“ or “Osc2 Shape” (these are equivalent).

Table

> **Sine ... Violator:** Selects one of many wavetables.



Semitone

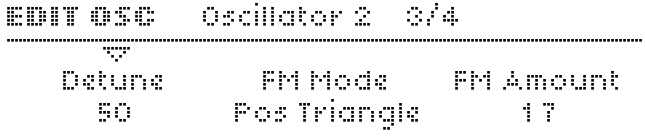
As in oscillator 1 – see “Semitone” on page 111. Modulation destination “Osc2 Pitch“.

Key Follow

As in oscillator 1 – see “Key Follow” on page 112.

Balance

Mirrors the Balance parameter in the oscillator 1 page – see “Balance” on page 112.



Detune

Accessible from the panel via the DETUNE 2/3 knob when oscillator 1 or 2 is selected.

> **0 to 127:** Fine-tunes oscillator 2 upwards. Modulation destination “Osc2 Detune“.

FM Mode

Specifies the type of FM (see glossary). Note that the FM modes available in Wavetable mode are different from those available in Classic mode – see “FM Mode” on page 116.

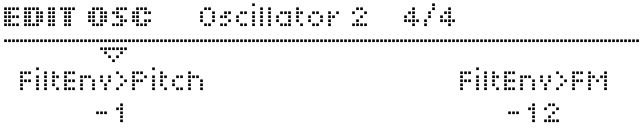
> **FreqMod:** Analog-style FM i.e. true frequency modulation.

> **PhaseMod:** DX7-style FM i.e. phase modulation.

FM Amount

Accessible from the panel via FM AMOUNT.

> **0 to 127:** Controls the intensity of frequency modulation. Modulation destination “FM/HyperSync“.



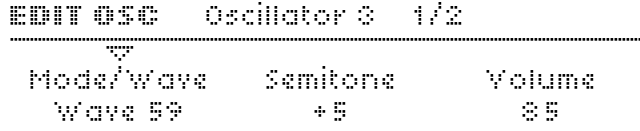
FiltEnv>Pitch

> **-64 to +63:** How much the filter envelope modulates the pitch of oscillator 2. This was implemented in previous Virus models to allow (especially) sync sweeps without using up precious space in the modulation matrix, and has been retained for compatibility reasons. Note that oscillator 2 in WaveTable mode does not feature Sync. Modulation destination “FiltEnv>Osc2 Pitch“.

FiltEnv>FM

> **-64 to +63:** Controls how much filter envelope is applied to FM Amount. Modulation destination “FiltEnv>FM/Hsync“.

Oscillator 3



Mode/Wave

Accessible from the panel via WAVE SELECT/ PW when oscillator 3 is selected. The waveform of oscillator 3.

> **Off:** Deactivates oscillator 3 (see OSC3 ON button). All other oscillator 3 parameters will be invisible.

> **Slave:** Oscillator 3 will follow oscillator 2. The mixture of waveforms i.e. SHAPE and any modulation applied to oscillator 2 will also apply to oscillator 3. The values of “Semitone” and “Detune” (see below) are ignored.

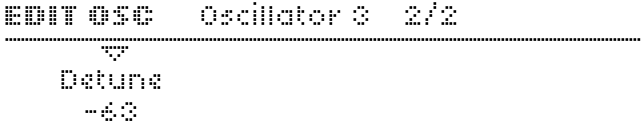
> **Saw, Pulse, Sine, Triangle, Wave 3 to Wave 64:** Oscillator 3 waveform. Note that if “Pulse” is selected here, its pulse width will follow that of oscillator 2.

Semitone

> **-48 to +48:** The pitch of oscillator 3. If Slave mode (see “Mode/Wave” above) is selected, this value will be ignored and oscillator 3 pitch will track oscillator 2 pitch. Modulation destination “Osc3 Pitch“.

Volume

> **0 to 127:** The level of oscillator 3 when switched on (see “OSC3 ON” on page 110 and “Mode/Wave” above). Modulation destination “Osc3 Volume”.



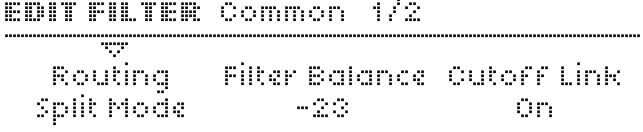
Detune

Accessible from the panel via the DETUNE 2/3 knob if oscillator 3 is selected. Ignored if Slave mode (see “Mode/Wave” above) is selected.

> **0 to -127:** Fine-tunes oscillator 3 downwards. Modulation destination “Osc3 Detune“.

Common

The Common pages contain parameters which affect more than one oscillator at the same time. To enter these pages, press EDIT once or twice until the LED flashes, and navigate using the PARAMETERS buttons.



Initial Phase

Modulation destination “Osc Initial Phase”.

> **Off:** The phase angle (see glossary) of each oscillator is reset to a random value at the start of each note. This closely emulates the “free-running” oscillators found in real analogue synthesizers.

> **1 to 127:** The phase angle of oscillator 1 is fixed at 0°, oscillator 2 phase is shifted forward, oscillator 3 phase is shifted backwards by the same amount. Because it ensures that the “click”at the start of notes always sound the same, setting the Initial Phase to a value other than Off is particularly useful for percussive sounds.

Key Mode

Specifies how voices are assigned:

> **Poly:** Polyphonic.

> **Mono 1:** Monophonic, multi-trigger, full portamento (see “Portamento” on page 122)

> **Mono 2:** Monophonic, multi-trigger, legato portamento

> **Mono 3:** Monophonic, single-trigger, full portamento

> **Mono 4:** Monophonic, single-trigger, legato portamento

> **Hold:** Polyphonic. Notes are held until they are all released and a new note is played.

Osc Volume

Accessible from the panel via the OSC VOLUME knob.

> **-64 to -63:** Determines the total level of all oscillators and input signals (but not Noise or Ring Modulator) immediately before entering the filters. Note: The value 0 is unity gain i.e. already maximum volume – positive values control Saturation intensity only (see “Saturation” on page 140). Modulation destination “Osc Volume“.

Portamento

> **Off, 1 to 127:** Determines how slowly the pitch of notes glides from one to the next. The actual effect of portamento depends on the KeyMode (see “Key Mode” on page 122). Modulation destination “Portamento”.

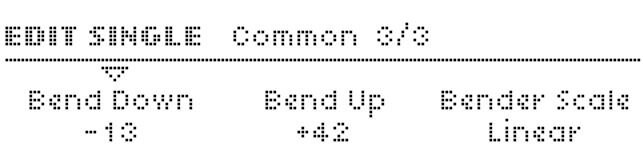
Punch

> **0 to 127:** Enhances the percussive effect of short Attack times in the amplifier envelope. At higher values, Punch becomes a noticeable “snap” at the start of each note. Modulation destination “Punch Intensity”.

FiltEnv>H-Sync

Only visible if at least one of the oscillators is in HyperSaw mode.

> **-64 to +63:** Controls how much filter envelope is applied to HyperSync Offset (see “HyperSync Offset” below). Analogous to FiltEnv>FM in the other oscillator models. If oscillators 1 and 2 are both HyperSaws, this parameter modulates the Sync Offset of both oscillators at the same time. Note that it will not effect oscillator 1 if SYNC is not active (see “About HyperSaw and Sync” on page 107).
Modulation destination “FiltEnv>FM/Hsync”.



H-Sync Offset

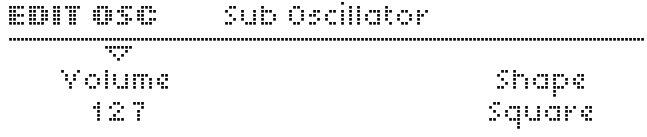
Only visible if at least one oscillator is in HyperSaw mode. Directly accessible from the panel via FM AMOUNT.

> **0 to 127:** The frequency offset of the audible HyperSaw with respect to its own internal “master” oscillator. Modulation destination “FM/HyperSync”.

Sub Oscillator

An extra “slave” oscillator tuned an octave below its master oscillator. If oscillator 1 is in Classic mode, the sub-oscillator is a Square or Triangle wave slaved to oscillator 1. See “Oscillator 1 – Classic” on page 110.

If either oscillator 1 or 2 is in HyperSaw mode, the sub oscillator is HyperSub instead – see “About HyperSaw and Sub Oscillators” on page 107 and “Oscillator 1 – HyperSaw” on page 112.



Volume

Accessible from the panel via SUB OSC VOLUME.

> **0 to 127:** Sub oscillator mix. In HyperSaw mode, this parameter crossfades between HyperSaw and HyperSub. See “About HyperSaw and Sub Oscillators” on page 107. Modulation destination “Sub Osc Volume“.

Shape

Not available if oscillator 1 is in HyperSaw or WaveTable mode. See “About HyperSaw and Sub Oscillators” on page 107.

> **Square, Triangle:** Selects the sub oscillator waveform.

Noise

Volume

Accessible from the panel via NOISE VOLUME.

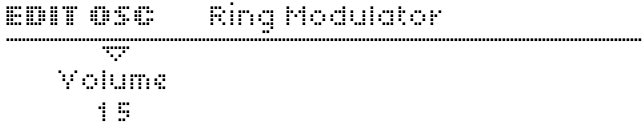
> **Off, 1 to 127:** The level of noise. If set to Off, the Color parameter will not be visible. Modulation destination “Noise Volume“.

Color

> **-64 to +63:** Adjusts the noise frequency range. Negative values are darker, positive ones are brighter. A value of 0 is standard “white noise” (see glossary). Modulation destination “Noise Color“.

Ring Modulator

The Ring Modulator creates additional frequencies (the sum and difference) by multiplying the oscillator 1 and 2 signals. Not active in Split Mode (see “Routing” on page 144).



Volume

Accessible from the panel via SHIFT + NOISE VOLUME.

> **Off, 1 to 127:** The output level of the ring modulator. Independent of OSC VOLUME (see “OSC VOLUME” on page 137). Modulation destination “Ring Modulator“.

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MASTER

The MASTER section (not labelled as such) includes all the controls to the left, right and below the display.

>PANEL CONTROLS

⇖EXIT

Closes any menu, returns to the current play mode (Single, Multi or Sequencer mode).

TAP

A “Tap Time” function as seen on drum machines and a few delay units. Tap this button evenly to change the tempo of the internal MIDI clock – the BPM will change accordingly. See “Tempo” on page 129.

EDIT

Opens the Master edit menu (see “EDIT MENU” on page 128).

MULTI EDIT

Via SHIFT + EDIT. Access to all MULTI mode settings (see “Multi Mode Reference” on page 165).

CONFIG

Opens the global configuration menu – see “Configuration Reference” on page 151.

REMOTE

Via SHIFT + CONFIG. Puts the Virus in remote mode i.e. for use as a MIDI controller box. The Virus TI can hold up to 32 different templates. Go to http://www.access-music.de and download the latest collection of templates for a variety of popular MIDI devices. Alternatively, custom templates can be created using the VirusControl application (see “VirusControl” on page 145).

Note that in REMOTE mode, the MASTER VOLUME knob can be set to control MIDI volume (CC#7) instead of output levels – see “Remote Mode” on page 162.

STORE

Opens a menu in which you can name and store edited programs or send system exclusive data via MIDI. See “Store” on page 136.

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RANDOM

Via SHIFT + STORE. Creates a random program based on the current one. See “Random PG” on page 152.

UNDO

1) While a program is being edited: Cancels the most recent parameter change.
2) After changing to a different program: Retrieves the most recently edited program.
3) During STORE: compare the edited program with the original in the specified location.

REDO

Via SHIFT + UNDO. “Undo the Undo” (see above).

TRANSPOSE

Use this pair of buttons to transpose the entire program in octaves. To transpose beyond the limits (-2 to +2 octaves) or to transpose in semitones, use the Transpose parameter in the MASTER EDIT menu (see “Transpose” on page 129).

In keyboard models of the Virus TI, a global parameter determines whether these buttons will affect the Virus sound engine or the MIDI data from the keyboard. See “Transpose Buttons” on page 156.

POWER ON/OFF

TRANSPOSE (down) + TRANSPOSE (up)
To put the unit into standby mode, hold both buttons for a few seconds. This allows the Virus to be powered down even when rack-mounted. Press both buttons again to restart the Virus.

SHIFT

Gives you access to all functions printed in red (Pølar: blue) on the panel. Simply press and hold SHIFT before using the required button or knob, then release afterwards.

SEARCH

Opens a menu in which you can scroll through programs belonging to a certain category (see “Categories” on page 134). Use the VALUE 1 knob to specify the category and the VALUE buttons to scroll through programs (watch the upper bar of the display). When you have found a suitable program, press the ↖EXIT button.

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AUDITION

Via SHIFT + SEARCH. Plays a note (C3) without you having to use a keyboard or sequencer.

BPM

LED indicator for system tempo (MIDI clock). See “TEMPO” on page 149 and “TAP” on page 125.

VALUE 1

Adjusts the parameter appearing directly above the knob.

CATEGORY

Via SHIFT + VALUE 1. Selects a category to make finding suitable programs easier, without having to open the SEARCH menu (see above). See “Categories” on page 134.

VALUE 2

Adjusts the parameter appearing directly above the knob.

BANK

Via SHIFT + VALUE 2. Selects a Bank. An alternative to using the BANK buttons to the right of the display.

VALUE 3

Adjusts the parameter appearing directly above the knob.

PROGRAM

Via SHIFT + VALUE 3. Selects a program. A faster alternative to using the PROGRAM buttons to the right of the display.

PART

Used for switching between the Parts in a Multi program or in Sequencer mode. See “Multi Mode Reference” on page 165 and “SEQ MODE” below.

MULTI

Switch to MULTI mode. If the Virus TI is already in Multi mode, exits any open menu. See “Multi Mode Reference” on page 165.

SINGLE

Switch to SINGLE mode. If the Virus is already in Single mode, exits any open menu.

SEQ MODE

Via MULTI + SINGLE. Switch to Sequencer Mode. This gives simultaneous access to 16 Single programs. Similar to Multi Mode, but there is only one Sequencer mode “program” and the MIDI channel is always equal to the PART number.

Note: No additional parameters are required – tempo, panning, MIDI volumes etc. are all handled by the sequencer application.

Just like in Multi Mode, Sequencer Mode data can be transmitted (e.g. recorded into a MIDI sequencer) via Arrangement dump – see “Transmit MIDI Dump” on page 155.

PARAMETERS / BANK

While any menu is open, use these buttons to scroll through individual pages (or parameters – see “Navigation” on page 163). These buttons also move the cursor while naming programs (see “STORE” on page 125).

If no menu is open, they are used to change the current bank.

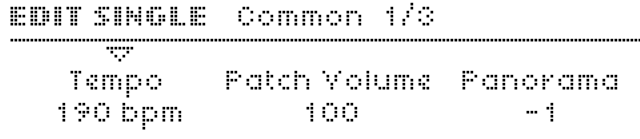
VALUE / PROGRAM

While a menu is open, these buttons decrement/increment the currently active parameter. If no menu is open, they step through programs within the current bank.

>EDIT MENU

The master EDIT button to the left of the display opens a menu giving access to all parameters which are not specific to any particular section, but (unlike configuration parameters) are still stored within each program.

Common



Tempo

Accessible via SHIFT + RELEASE in the AMPLIFIER ENVELOPE section.

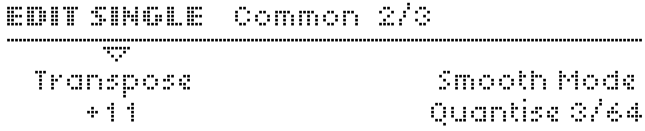
> **63 bpm to 190 bpm:** The Virus has an internal clock to which the LFOs, arpeggiator and delay/reverb can be synchronized (see the respective sections). The clock automatically slaves to any received MIDI clock signal, otherwise it adopts this value. See “MIDI Clock” on page 153.

Patch Volume

> **0 to 127:** Overall volume of a program, particularly useful for balancing levels between different programs (or Parts when in Multi or Sequencer modes). Note that you may have to keep this value well below 127 to avoid unwanted distortion, especially when playing many notes at the same time – 100 is a good starting point. Patch Volume reacts to MIDI CC#7 (Channel Volume) as well as CC#11 (Expression). Modulation destination “Patch Volume“.

Panorama

> **-64 to +63:** The position of the signal across the stereo outputs. Reacts to MIDI CC#10 (Panorama). Modulation destination “Panorama“.



Transpose

> **-64 to +63 semitones:** Transposes the pitch of the entire program in semitones. Modulation destination “Transpose“.

Smooth Mode

Right from the very beginning, Access have been applying a technique called “Adaptive Control Smoothing” (ACS) in all their synthesizer models, thus avoiding the zipper noise that rapid changes (knob movements, modulation) would otherwise cause.

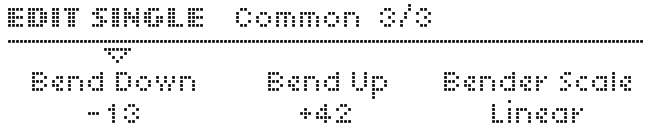
> **Off:** Smoothing is disabled. Pros: Value jumps are immediate, with no glitches. Useful for gater-effects etc. when using a sequencer. Cons: Continuous control changes are incremental, meaning you may have to accept some zipper noise.

> **On:** Smoothing is enabled. Pros: Continuous control changes are smooth, so this setting is generally the better option. Cons: Sometimes too slow for intentional rapid jumps e.g. gater-effects.

> **Auto:** Control changes are analysed, and smoothing is switched on or off depending upon how fast these change-sare. Pros: Smooth and sudden control changes can be applied to the same sound. Cons: Rapidly repeating jumps may be too fast to analyse correctly.

> **Note:** Smoothing is disabled, any changes are only heard at the start of each played note (not inbetween). Pros: No glitches. Cons: Smooth transitions not possible.

> **Quantize 1/64 ... 1/1:** Smoothing is disabled, any changes only occur at rhythmic intervals relative to the Tempo, expressed as a 4/4 bar division. See “Tempo” on page 129.



Bend Up

> **-64 to +63 semitones:** How much pitch bend is applied to the oscillators when the Pitch Bender (on a keyboard etc.) is at maximum.

Bend Down

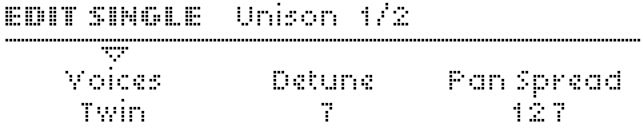
> **-64 to +63 semitones:** How much pitch bend is applied when the Pitch Bender is at minimum.

Bender Scale

> **Linear:** Pitch bend is directly proportional to the position of the Pitch Bender.

> **Exponential:** Pitch bend sensitivity is lower when the bender is close to its middle position, allowing for more subtle control over pitch.

Unison



“Unison” means several instances of the same note at the same time. In the Virus, voices can be stacked up, detuned against each other and spread across the stereo field (see “Pan Spread” below) for a richer sound. The trade-off is a reduction in polyphony.

Voices

> **Off, Twin, 3 to 16:** How many voices are used for each note. “Twin” is relatively efficient, only halving the maximum polyphony while giving fine control over LFO phase (see below). If set to Off, no other Unison parameters will be visible except Pan Spread (see below).

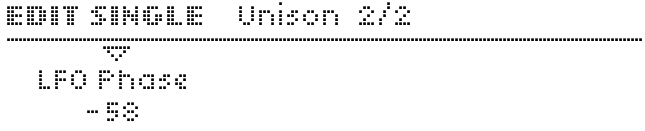
Detune

Available from the panel via SHIFT + DETUNE in the OSCILLATORS section.

> **0 to 127:** How much the stacked voices are detuned against each other. Modulation destination “Unison Detune”.

Pan Spread

> **0 to 127:** The stereo width of the signal. As well as applying to Unison sounds, this parameter also applies to any Parallel and Split mode sounds (see filter “Routing” on page 144), so it is still visible even if Voices (see above) is set to Off. Modulation destination “Pan Spread“.



LFO Phase

> **-64 to +63:** How much the phases of all LFOs are shifted against each other. For making Unison sound even more complex. Modulation destination “Unison LFO Phase”.

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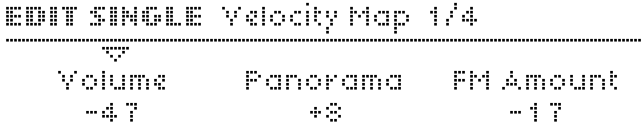
Velocity Map

These pages give you access to several fixed destinations for MIDI velocity data (i.e. how hard a key is struck).



Volume

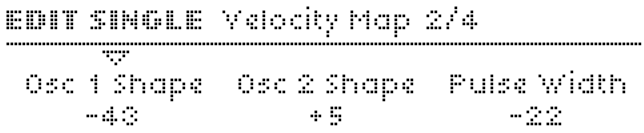
> **-64 to +63:** How much velocity affects the total volume of all internal sound generation sources.

Panorama

> **-64 to +63:** How much velocity affects panorama position.

FM Amount

> **-64 to +63:** How much velocity affects the amount of frequency modulation (FM) between oscillators 1 and 2. For HyperSaw oscillators, this affects HyperSync offset instead (see “About HyperSaw and Sync” on page 107).



Osc 1 Shape

> **-64 to +63:** How much velocity affects oscillator 1 Shape. If oscillator 1 is in HyperSaw mode, this is the Density parameter. If oscillator 1 is in WaveTable mode, this is the Index parameter.

Osc 2 Shape

> **-64 to +63:** How much velocity affects oscillator 2 Shape. If oscillator 2 is in HyperSaw mode, this is the Density parameter. If oscillator 2 is in WaveTable mode, this is the Index parameter.

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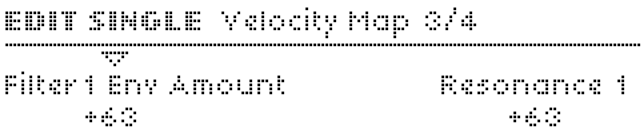
Pulse Width

> **-64 to +63:** How much velocity affects the pulse width of all main oscillators. For oscillators in HyperSaw mode, this affects the Spread parameter.

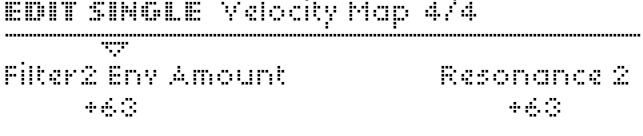


Filter 1 Env Amount

> **-64 to +63:** How much velocity affects the envelope amount of filter 1. See “ENV AMOUNT” on page 139.

Resonance 1

> **-64 to +63:** How much velocity affects the resonance of filter 1. See “RESONANCE” on page 139.



Filter 2 Env Amount

> **-64 to +63:** How much velocity affects the envelope amount of filter 2. See “ENV AMOUNT” on page 139.

Resonance 2

> **-64 to +63:** How much velocity affects the resonance of filter 2. See “RESONANCE 2” on page 139.

Inputs

Mode

Instead of using the internal oscillators, a signal from the external inputs can be treated using the Virus filters, envelopes and effects.

> **Off:** Standard setting i.e. the Virus oscillators are used as the basic source of sound.

> **Dynamic:** The source specified by Input Select (see below) is routed to the FILTERS section, the envelopes remain functional. This means you have to play a note to hear any sound. Although there is only one audio source, each note has an independant envelope and filter.

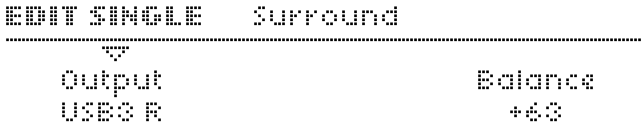
> **Static:** The source specified by Input Select is routed to the FILTERS section, but all envelopes are ignored. The filter section effectively becomes “monophonic”.

Input Select

Specifies the signal source.

> **Left, L+R, Right:** Signal from the left, both or right inputs.

Surround



The Virus has two additional stereo outputs. Although especially useful in MULTI mode, the addtional stereo outputs can also be used in SINGLE mode as send channels for external effects etc..

Output

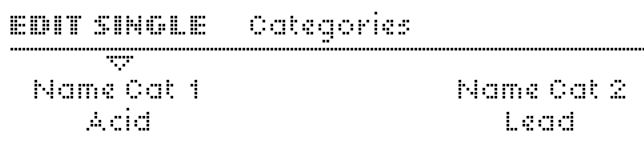
> **Out1 L ... Out3 R:** Which audio jacks will be used for additional audio output.

Balance

> **-64 to +63:** Cross fade between standard outputs and surround outputs (see above). Useful as external effect send, or for surround mixes in combination with the Panorama parameter (see “Panorama” on page 87).

Categories

Programs are assigned one or two categories to make it easier to find particular types (Lead, Pad, Drums etc.) via the SEARCH function.



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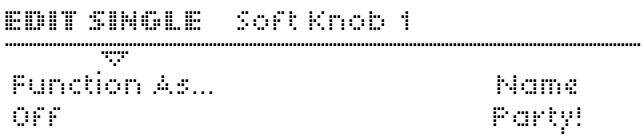
Name Cat 1, Name Cat 2

> **Off, Acid ... Favourites 3:** Select Category names. As certain sounds could conceivably belong to more than one such category (e.g. Bass and Digital), two can be specified.

Soft Knob



As well as being used for editing, the three VALUE knobs below the display function as extra performance controls called “Soft Knobs” for instant access to parameters that might otherwise not be directly available. See also “Soft Knob (global settings)” on page 159.

Function as...

> **Off, Analog Boost Int ... Velo>Volume:** Select from a list of Soft Knob destinations.

Tip: Instead of direct control, it is fairly common to specify a continuous controller (e.g. CC06 Data) here, then use the same CC as source in the modulation matrix. This method not only lets you control a wider range of destinations with the Soft Knobs, but also allows multiple destinations with variable ranges – complex morphing at the twist of a knob.

Name

> **+3rds ... Width:** Specifies a word that will appear above the VALUE knob – try to choose the most appropriate name for the overall effect of adjusting this knob.

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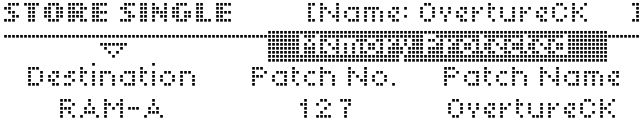
STORE

Store

To save the current program under the same name to the same position (RAM only), press STORE *three times in succession. To abort any of these functions, press the* ⇖EXIT *button.*



Destination

> **RAM-A to RAM-D:** Select a bank to store to.

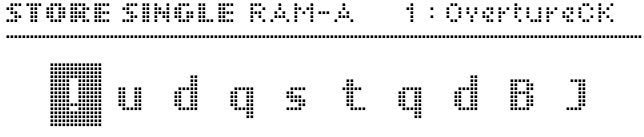
> **Dump Single:** Send the current program via MIDI to an external device e.g. computer or another Virus. When you are ready to transmit the program (e.g. another Virus is connected via MIDI or your sequencer has started recording), press STORE again.

Patch No.

> **0 to 127:** Selects the program number you wish to overwrite. After selecting a bank and patch number, press STORE again to edit the name (see “Editing the Patch Name” below).

Patch Name

> **(dynamic):** Displays the name of the program currently in the location of Patch No.. To name the new patch, press STORE a s econd time...



Editing the Patch Name

> **(dynamic):** Use the PARAMETERS buttons as cursor and any of the VALUE knobs/buttons to change the character. When you have finished, press STORE a third time to finally save your program.

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MIX

This section controls the relative levels of all sound sources except audio inputs. The MIX section has no EDIT button – you will find all MIX parameters in the oscillators edit menu.

OSC BALANCE

Cross fade between oscillator 1 and oscillator 2.
See “Balance” on page 112.

PANORAMA

Via SHIFT + OSC BALANCE. Position of the signal output across the stereo field.

SUB OSC VOLUME

Sub oscillator volume. See “About HyperSaw and Sub Oscillators” on page 107.

OSC3 VOLUME

Via SHIFT + SUB OSC VOLUME. The volume of oscillator 3 when it is switched on (via the OSC3 ON button).

Original Value Indicator

This LED lights up briefly when the original value of any parameter (as stored in memory) has been reached.

OSC VOLUME

Controls the overall level of the 3 oscillators plus the sub-oscillator, but not the noise and ring modulator levels. Note that positive values do not increase the volume, but only the saturation intensity.
See “Osc Volume” on page 122 and “Saturation” on page 140.

SATURATION TYPE

Via SHIFT + OSC VOLUME. Filter saturation type.
See “Saturation” on page 140.

NOISE VOLUME

The level of the noise signal, independant of OSC VOLUME.
See “Noise” on page 124.

RING MODULATOR

Via SHIFT + NOISE VOLUME. The level of the ring modulator signal, independant of OSC VOLUME.

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The inputs to the ring modulator are always oscillator 1 and oscillator 2 (including any FM). The ring modulator is disabled in Split mode. See “Routing” on page 144 and “Ring Modulator” on page 124.

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FILTERS

The Virus TI has two multimode filters that can be configured in series, parallel or split (i.e. separate left and right channels with differing signal sources).

>PANEL CONTROLS

CUTOFF

The cutoff frequency of filter 1 (see “Cutoff” on page 141). If Cutoff Link is on (see “Cutoff Link” on page 145), this will also control filter 2 Cutoff.

RESONANCE

The resonance of one or both filters at the same time, depending on the status of the two SELECT buttons.
See “Resonance” on page 141.

RESONANCE 2

Via SHIFT + RESONANCE. The resonance of filter 2, whatever the status of the two SELECT buttons.

ENV AMOUNT

The amount of filter envelope applied to cutoff. Applied to one or both filters at the same time, depending on the status of the two SELECT buttons.

KEY FOLLOW

Via SHIFT + ENV AMOUNT. How much cutoff follows pitch so that e.g. higher notes are brighter than lower ones. Applied to one or both filters at the same time, depending on the status of the two SELECT buttons.

FILTER BALANCE

The relative contribution of the two filters. Actually a complex set of crossfades, but the results are intuitive enough: At -64 you can only hear the output of filter 1. At 0, both filters contribute equally. At +63 you can only hear the output of filter 2.

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CUTOFF 2

The cutoff frequency of filter 2 only. If Cutoff Link (see “Cutoff Link” on page 145) is on, this will be a bipolar offset relative to filter 1.

FILT 1 – MODE – FILT 2

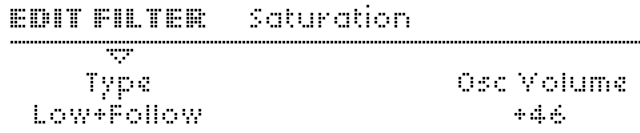
The basic types of filter. In addition to the four modes represented by each row of LEDs, the Virus has four “Analog” filter modes which are only available from within the filter edit menu (see “Mode” on page 142).

SELECT

These two buttons determine which filter(s) the RESONANCE and ENV AMOUNT knobs will control. Press both at the same time for simultaneous control over both filters.

> EDIT MENU

Saturation



Type

Accessible from the panel via SHIFT + OSC VOLUME in the MIX section.

> **Off:** No saturation. Note that positive OSC VOLUME values will still control “analog” saturation if an Analog filter model is selected (see “Mode” on page 142).

> **Light, Soft, Medium, Hard, Digital:** Four different distortion curves.

> **Wave Shaper:** Sinusoidal waveshaping (see glossary). Can cause drastic changes to a waveform comparable to linear FM. Note that the Wave Shaper already starts to take effect at low OSC VOLUME (i.e. negative values).

> **Rectifier:** Full wave rectification (see glossary). Inverts half of the signal, thus distorting the sound.

> **Bit Reducer:** Bit depth reduction. Generates digital quantization noise similar to early samplers.

> **Rate Reducer:** “Sample” rate reduction. Generates digital aliasing similar to early samplers.

> **Rate+Follow:** Rate reduction with Key Follow (see glossary).

> **Low Pass:** Simple low pass filter.

> **Low+Follow:** Low Pass with Key Follow.

> **High Pass:** Simple high pass filter.

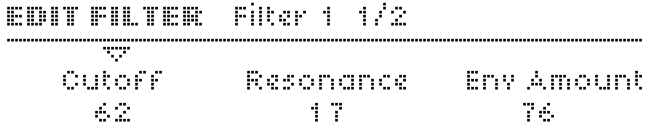
> **High+Follow:** High Pass with Key Follow.

Osc Volume / Saturation

Accessible from the panel via OSC VOLUME.

> **-64 to -63:** See “Osc Volume” on page 122. Because the OSC VOLUME knob also controls saturation, this parameter changes its name depending on the value. Please remember that some saturation types (especially Wave Shaper) already take effect below the central position.

Filter-1



Cutoff

Accessible from the panel via CUTOFF.

> **0 to 127:** Filter 1 threshold frequency. Modulation destination “Filter1 Cutoff”.

Resonance

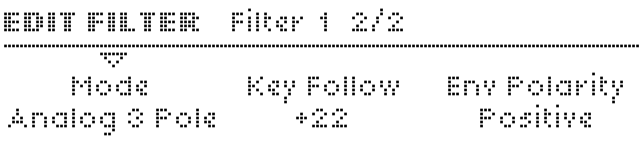
Accessible from the panel via RESONANCE.

> **0 to 127:** Accentuation of the filter 1 Cutoff frequency. The actual effect of resonance depends on the selected Mode (see below). Modulation destination “Filter1 Resonance”.

Env Amount

Accessible from the panel via ENV AMOUNT when filter 1 is selected.

> **0 to 127:** The amount of filter envelope applied to filter 1 Cutoff. Note that this effect can be inverted (see “Env Polarity” on page 143).
Modulation destination “Filter 1 Env Amount”.



Mode

Accessible from the panel via the FILT1 button (except the Analog modes).

> **Low Pass:** LP. Allows frequencies below the cutoff point to pass through i.e rejects those above the cutoff point

> **High Pass:** HP. Allows frequencies above the cutoff point to pass through i.e. rejects those below the cutoff point

> **Band Pass:** BP. Allows frequencies close to the cutoff point to pass through i.e. simultaneously rejects those above and below the cutoff point

> **Band Stop:** BS. Rejects frequencies close to the cutoff point i.e. allows frequencies above or below the cutoff point to pass through. Note that Resonance (see “Resonance” on page 141) effectively narrows this band, making the effect actually more subtle.

> **Analog 1 Pole ... Analog 4 Pole:** Emulation of a classic analog cascade (or ladder) filter, but with a variable number of poles. In this mode, the Saturation Type (see “Type” on page 140) is ignored – it is replaced by MiniMoog™ style filter saturation. This type is interesting for experimentation, often yielding surprising results when the resonance is set very high.

Key Follow

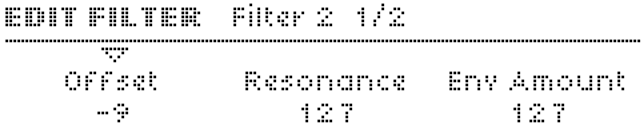
Accessible from the panel via SHIFT + ENV AMOUNT when filter 1 is selected.

> **-64 to +63:** How much cutoff follows the MIDI note and pitch bender. See “Key Follow Base” on page 145.

Env Polarity

> **Positive, Negative:** The effect of Env Amount on filter 1 can be inverted by setting this parameter to Negative.

Filter-2



Cutoff

Accessible from the panel via CUTOFF 2.

> **0 to 127 or -64 to +63:** Filter 2 threshold frequency. If Cutoff Link (see “Cutoff Link” on page 145) is active, filter 2 cutoff becomes a bipolar offset to filter 1 instead of an absolute value. Modulation destination “Filter2 Cutoff”.

Resonance

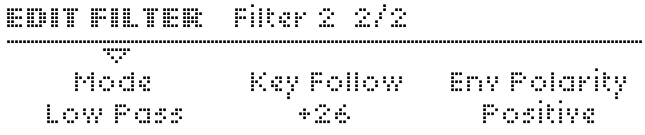
Accessible from the panel via RESONANCE if filter 2 is selected.

> **0 to 127:** Accentuation of the filter 2 Cutoff frequency. The actual effect of resonance depends on the selected Mode (see below). Modulation destination “Filter2 Resonance”.

Env Amount

Accessible from the panel via ENV AMOUNT when filter 2 is selected.

> **0 to 127:** Filter 2 envelope amount i.e. the amount of filter envelope applied to its cutoff. Note that this can be inverted by changing the polarity (see “Env Polarity” on page 144). Modulation destination “Filter2 Env Amount”.



Mode

Accessible from the panel via the FILT2 button.

> **Low Pass:** LP. Allows frequencies below the cutoff point to pass through i.e rejects those above the cutoff point

> **High Pass:** HP. Allows frequencies above the cutoff point to pass through i.e. rejects those below the cutoff point

> **Band Pass:** BP. Allows frequencies close to the cutoff point to pass through i.e. simultaneously rejects those above and below the cutoff point

> **Band Stop:** BS. Rejects frequencies close to the cutoff point (within a certain “band”) i.e. allows frequencies above or below the cutoff point to pass through. Note that Resonance (see “Resonance” on page 141) effectively narrows this band, making the effect less obvious.

Note that filter 2 does not offer “Analog” modes.

Key Follow

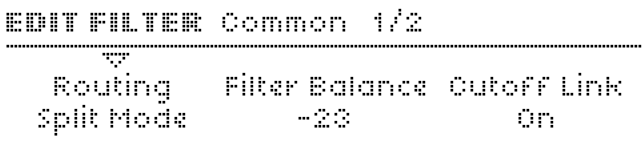
Accessible from the panel via SHIFT + ENV AMOUNT when filter 2 is selected.

> **0 to 127:** How much cutoff 2 follows the MIDI note and pitch bender. See “Key Follow Base” on page 145. Modulation destination “Filter2 Key Follow”.

Env Polarity

> **Positive, Negative:** The effect of Env Amount on filter 2 cutoff can be inverted by setting this parameter to Negative.

Common



Routing

There is no difference between Serial 4 and Serial 6 if one of the “Analog” filter modes is selected (see “Mode” on page 142).

> **Serial 4:** The filters are routed in series, with 2 poles (see glossary) each.

> **Serial 6:** The filters are routed in series, filter 1 has 4 poles and filter 2 has 2 poles.

> **Parallel 4:** The filters are routed in parallel with 2 poles each.

> **Split Mode:** The filters are also routed in parallel with 2 poles each, but each filter receives a different set of signals: Oscillator 1 and the sub-oscillator are sent to filter 1, oscillator 2 (including FM), oscillator 3 and noise are sent to filter 2. The ring modulator is disabled.

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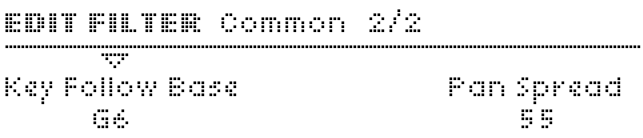
Filter Balance

> **-64 to +63:** Put as simply as possible, this is the relative contribution of each filter to the overall output of the filter section. Actually a complex set of cross-fades, but the result is highly intuitive: At -64 you can only hear the output of Filter 1. At 0, both filters contribute equally. At +63 you can only hear the output of Filter 2.

Cutoff Link

> **Off:** The filter 1 CUTOFF knob only affects filter 1.

> **On:** The upper CUTOFF knob also controls filter 2. The lower knob (CUTOFF 2) becomes a bipolar (-64 to +63) offset to filter 1 cutoff instead of an independant value.



Key Follow Base

> **C-2 to G8:** The pivot-note for Key Follow (see “Key Follow” on page 142). Notes below and above this point will be affected by Key Follow.

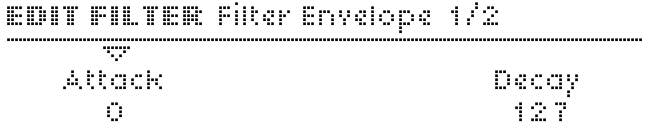
Pan Spread

Only visible here in Split mode (see “Routing” above).

> **0 to 127:** The stereo width of the Split mode signal i.e. the relative levels of the left and right signals. Pan Spread also applies to Unison sounds, and is therefore mirrored in the Master edit menu (see “Unison” on page 131). Modulation destination “Pan Spread“.

Filter Envelope

Please refer to the images in “The Amplifier Envelope Section” on page 21.



Attack

Accessible from the panel via the upper ATTACK knob.

> **0 to 127:** The time it takes for the filter envelope to rise from 0 to maximum.

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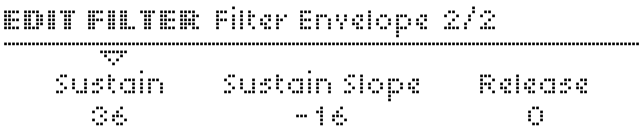
Decay

Accessible from the panel via the upper DECAY knob.

> **0 to 127:** The time it takes to fall from maximum to the Sustain level (see below).



Sustain

Accessible from the panel via the filter SUSTAIN knob.

> **0 to 127:** The nominal level after the Decay.

Sustain Slope

Accessible from the panel via SHIFT+SUSTAIN in the Filter Envelope section.

> **-64 to +63:** Negative values cause the sustain phase to decay to zero, positive values cause it to rise to maximum. See the images in “FILTER ENVELOPE” on page 148.

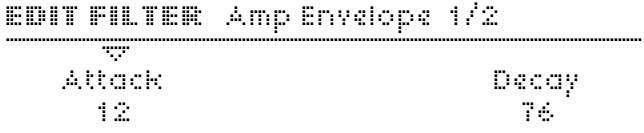
Release

Accessible from the panel via the RELEASE knob

> **0 to 127:** Starts as soon as a note is released – the time it takes to fall from the current level to zero.

Amp Envelope

Please refer to the images in “The Amplifier Envelope Section” on page 21. As the amplifier envelope section has no EDIT button, these parameters are accessed via the EDIT button in the FILTERS section.



Attack

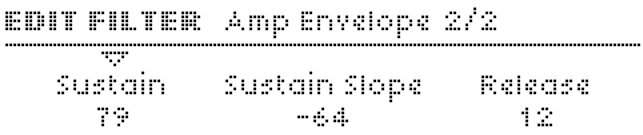
Accessible from the panel via the lower ATTACK knob.

> **0 to 127:** The time it takes for the amplifier envelope to rise from 0 to maximum.

Decay

Accessible from the panel via the lower DECAY knob

> **0 to 127:** The time it takes to fall from maximum to the Sustain level (see below).



Sustain

Accessible from the panel via the amp SUSTAIN knob.

> **0 to 127:** The nominal level after the Decay.

Sustain Slope

Accessible from the panel via SHIFT+SUSTAIN in the Amplifier Envelope section.

> **-64 to +63:** Negative values cause the sustain phase to decay to zero, positive values cause it to rise to maximum. See the image under “SUSTAIN SLOPE” on page 22.

Release

Accessible from the panel via the amp RELEASE knob.

> **0 to 127:** The time it takes to fall from the current level to zero after the note is released.

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FILTER ENVELOPE

Direct access to the filter envelope parameters. Please refer to “Filter Envelope” on page 145 for details of the individual knob functions.

The FILTER ENVELOPE section has no EDIT button – all parameters can be accessed via the edit button in the FILTERS section. See also “ENV AMOUNT” on page 139.

The effects of SUSTAIN SLOPE are illustrated in “The Amplifier Envelope Section” on page 21. Note that the filter envelope generator can also be used for other purposes by setting Filter Envelope as source in the Matrix.

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AMPLIFIER ENVELOPE

Direct access to the amplifier envelope parameters. Only the two “non-envelope” SHIFT functions will be listed here – please refer to “Amp Envelope” on page 146 for details of the normal knob functions.

The amplifier envelope section has no EDIT button – all parameters can be accessed via the edit button in the FILTERS section. The effects of SUSTAIN SLOPE are illustrated in “The Amplifier Envelope Section” on page 21.

PATCH VOLUME

Via SHIFT + ATTACK. Quick access to the Patch Volume parameter, used for balancing levels between different programs. See “Patch Volume” on page 129.

TEMPO

Via SHIFT + RELEASE. Quick access to the internal clock rate – see “Tempo” on page 129. In Multi Mode, this controls the Master Clock parameter (see “Master Clock” on page 168).

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5: Configuration Reference

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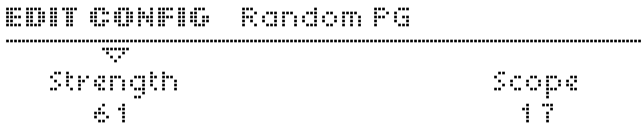
This menu is opened by pressing the CONFIG button to the left of the display. It contains global parameters that determine how the entire Virus works. Configuration data does not have to be explicitly stored.

Random PG

The Random Program Generator global settings. Use the RANDOM function (SHIFT + STORE) to randomly modify an existing program.



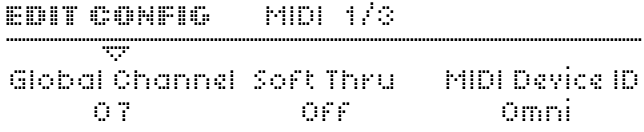
Strength

> **0 to 127:** How drastically the Random function will affect program parameters.

Scope

> **0 to 127:** How many program parameters will be affected. Note that if this value is set very high, successive use of the Random PG will tend to create sounds will little or no tonality.

MIDI



Global Channel

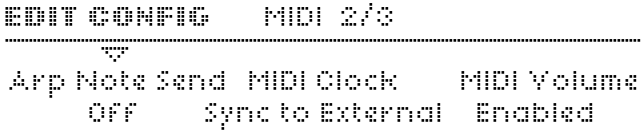
> **1 to 16:** Specifies a MIDI channel used for SINGLE mode, as well as for switching between MULTI mode programs via the MIDI message “Program Change”.

Soft Thru

> **Off, On:** Specifies whether received MIDI data is also directly routed to (i.e. mirrored at) the MIDI out socket. Before switching this parameter on, make sure there will be no MIDI loop in your system.

MIDI Device ID

> **1 to 16, Omni (17):** Identification number for transmitting/receiving System Exclusive data (see glossary). To allow SysEx communication between two devices, they must be set to the same device ID. If set to Omni, the Virus will receive Sysex data with any ID, and transmit with ID = 17.



Arp Note Send

> **Off, On:** Specifies whether the notes created by the arpeggiator (see “Arpeggiator” on page 76) will be sent to the MIDI output instead of the original played notes.

MIDI Clock

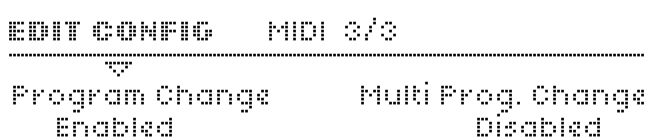
> **Internal Sync:** Any received MIDI Clock will be ignored. An internally generated clock is used instead.

> **Sync to External:** Received MIDI Clock will be recognized. This is the standard setting.

> **Send:** Internally generated MIDI Clock is sent to the MIDI output.

MIDI Volume

> **Disabled, Enabled:** Specifies whether MIDI CC#7 (volume) will be recognized.



Program Change

> **Disabled, Enabled:** Specifies whether the MIDI message “Program Change” will switch Single programs. This applies to programs in Single mode as well as PARTs in Multi or sequencer mode.

Multi Prog. Change

> **Disabled, Enabled:** Specifies whether the MIDI message “Program Change” will switch the entire Multi Mode program if received on the global MIDI channel (see “Global Channel” on page 152).

MIDI Dump RX

Receive Dump

The Virus automatically recognizes the type of data appearing at its MIDI input. Whenever individual programs are received, they will appear in the Edit Buffer (see glossary), and must be explicitly stored (see “STORE” on page 125). Therefore, the following options only apply when receiving entire banks:

> **Disable:** Program data arriving at the MIDI input will be ignored.

> **Enable:** Bank data (128 sounds) will be stored to the Bank from which it was originally dumped, regardless of which bank is currently selected.

> **To Bank A:** Bank data is always stored in bank A.

> **To Bank B:** Bank data is always stored in bank B.

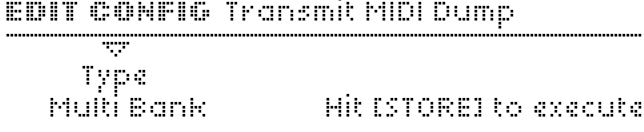
> **To Bank C:** Bank data is always stored in bank C.

> **To Bank D:** Bank data is always stored in bank D.

> **To Edit Buffer:** Incoming bank data is not stored, but is treated as a series of individual programs. These will appear sequentially in the edit buffer – useful for trying out sounds without having to overwrite an entire bank.

> **Verify:** Incoming bank data is compared with the memory in the Virus, after which a status message appears. Use this setting to check whether a bulk dump has been successful.

MIDI Dump TX



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Transmit MIDI Dump

Transmits various types of system exclusive data to an external device e.g. a computer or another Virus.

> **Single Buffer:** The contents of the single Edit buffer i.e. the current Single program (or Part without the Multi settings). This function is also available in the STORE menu for easy access – see the “Patch No” option under “STORE” on page 136.

> **Single Bank A:** All 128 programs in Bank A.

> **Single Bank B:** All 128 programs in Bank B.

> **Single Bank C:** All 128 programs in Bank C.

> **Single Bank D:** All 128 programs in Bank D.

> **Controller Dump:** A Single program, but in the form of a succession of individual parameter changes. These can take the form of MIDI CCs, Polypressure or Sysex, depending on the value of two other parameters (see “MIDI Control” on page 157). The Controller Dump setting is mainly used for updating the data in parameter-based editors (e.g. a Logic environment) and can be relatively slow.

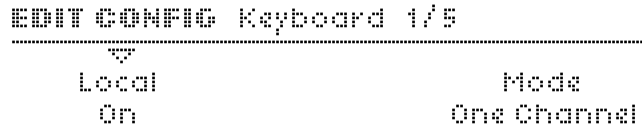
> **Arrangement:** All 16 sounds in the current Multi buffer or Sequencer mode buffer plus the additional “multi” settings.

> **Multi Bank:** All Multi programs.

> **Remote Patches:** All Remote Templates.

Keyboard

Note: The “Keyboard” pages are only available in keyboard versions of the Virus.



Local

> **Off:** Keyboard data (notes, modulation wheel, pitch bend etc.) is sent only to MIDI OUT, not to the internal sound generation.

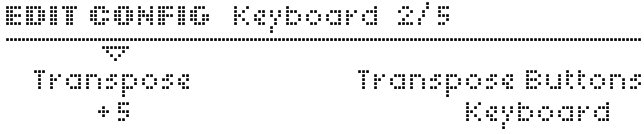
> **On:** Standard setting. The keyboard is directly connected to the internal sound generation as well as to MIDI out.

Mode

This parameter can be set in Single mode, but it only applies to MULTI mode. See “Multi Mode Reference” on page 165.

> **One Channel:** The keyboard transmits MIDI data (notes etc.) to the currently selected Part via the MIDI channel defined in that Part.

> **Multi Channels:** The keyboard transmits MIDI data (notes etc.) to all Parts, regardless of the assigned MIDI channel.

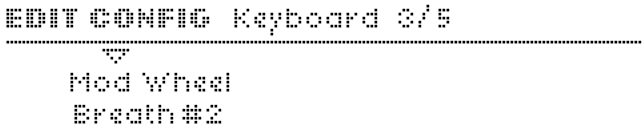


Transpose

> **-64 to +63:** Transposes (in semitones) either the sound engine (see glossary) or the keyboard, depending upon the value of Transpose Buttons...

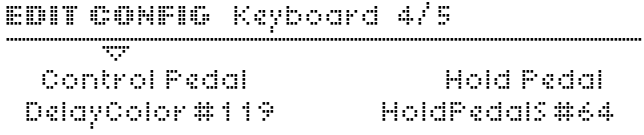
Transpose Buttons

> **Patch, Keyboard:** Specifies whether the TRANSPOSE buttons on the panel will apply to the sound engine (Patch) or to MIDI note data from the keyboard.



Mod Wheel

> **0 to 127:** Specifies the MIDI CC number (see glossary) transmitted by the modulation wheel. The standard value is 1 (“Mod Wheel”).

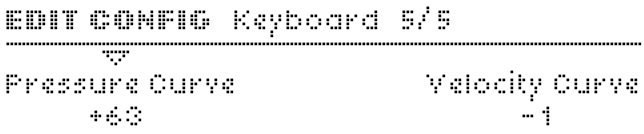


Hold Pedal

> **0 to 127:** Specifies the MIDI CC number transmitted by a device – usually a Hold (sustain) pedal connected to the HOLD socket. The standard value is 64 (“Hold”).

Pedal 2

> **0 to 127:** Selects the MIDI CC number transmitted by a device – usually an expression pedal – connected to the PEDAL 2 socket. The most common values for this parameter would be 4 (Foot Pedal), 7 (Volume) or 11 (Expression).



Pressure Curve

> **-64 to +63:** Channel aftertouch sensitivity. Adjust this parameter to suit your playing style. The standard value (linear) is 0.

Velocity Curve

> **-64 to +63:** Keyboard dynamics sensitivity. Adjust this parameter to suit your playing style. The standard value (linear) is 0.

MIDI Control

Governs how Page A and Page B parameters are handled during MIDI communication with e.g. a computer or MIDI controller unit. Note that system exclusive data is always recognized, irrespective of the settings here. Further information, including a list of all parameters, is available at www.access-music.de.

Page A

> **SysEx:** Page A parameters are transmitted/received as system exclusive packets. Controller data reception is disabled.

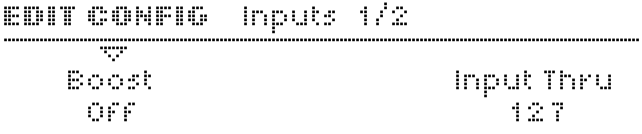
> **Controller Data:** Page A parameters are transmitted/received in the form of MIDI CC (see glossary) data.

Page B

> **SysEx:** Page B parameters are transmitted and received in the form of system exclusive packets. Controller data reception is disabled.

> **Poly Pressure:** Page B parameters are transmitted and received in the form of Poly-pressure (see glossary) data.

Inputs

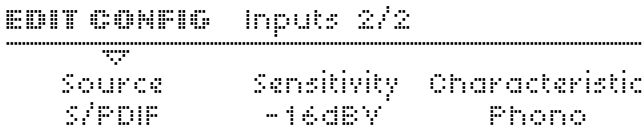


Boost

> **0 to 127:** Boosts the input - use this only for very low level signals.

Input Thru

> **0 to 127:** The level of external signal sent directly to output 1.



Source

> **Analog:** Audio input is via the INPUT jacks only.

> **S/PDIF:** Audio input is via S/PDIF only.

Sensitivity

> **+16 dBV, +5 dBV, -8 dBV, -16 dBV:** Select sensitivity to suit different external audio sources.

Characteristic

> **Linear, Phono:** Vinyl discs have a special frequency response which generally needs adjusting for. Set this parameter to Phono when either connecting a turntable directly or using audio material recorded directly from vinyl (i.e. without deemphasis).

Audio Clock

Source

Specifies the source of audio clock used for synchronization.

> **Auto:** The default setting. Audio clock via USB or S/PDIF is automatically recognized, otherwise the internal one is used.

> **Internal:** Only use the internally generated audio clock.

Frequency

> **44.1 kHz, 48.0 kHz:** Basic audio clocking frequency.

> **Synced to Host:** Virus is clocked by host.

Soft Knob (global settings)

Three identical menu pages, one for each Soft Knob...

Destination

> **Off, Analog Boost Int ... Velo>Volume:** Global destination. Used whenever the Soft Knob is left undefined in a program (see “Soft Knob” on page 135) or the Global parameter is set to On here...

Mode

> **Single:** The individual program setting for this Soft Knob will apply. See “Soft Knob” on page 135.

> **Global:** Only the global destination (see below) will apply. Overrides all individual program settings for this Soft Knob.

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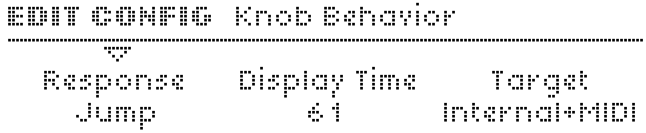
Knob Behaviour



Response

Determines when and how parameters react to knob movements. Required because the position of knobs seldom reflects the stored values after changing to another program. The Snap and Rel modes are useful for preventing sudden changes in the sound, especially during live performance.

> **Off:** Knobs have no effect whatsoever.

> **Jump:** The value jumps immediately to reflect the new knob position.

> **Snap:** The value is not affected until the original is reached by turning the knob.

> **Rel:** The value immediately changes in the direction of knob movement (without jumping), but limits may not be reachable directly – knob positions only reflect values after the original (stored) value has been reached.

Display Time

> **Off:** Knob values not be displayed.

> **Off, 1 to 127:** Knob values will be displayed for up to 7 seconds.

Target

> **Internal:** Knobs control internal functions directly and do not send MIDI.

> **Internal+MIDI:** Knob data is also sent to MIDI Out.

> **MIDI:** Knobs do not directly control internal functions, the data is sent to MIDI Out only. This setting is similar to the “Local Off” mode found in several other synthesizers.

Global Tuning

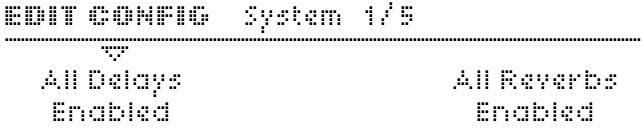
Master Tuning

> **-64 to +63:** Fine control over the pitch of the entire Virus, from 50 cents lower to 50 cents higher. A “cent” is one hundredth of a semitone.

Pure Tuning

> **Tempered, 1 to 63, Natural, 65 to 126, Pure:** Variable degree of “Hermode” tuning (see glossary) – slight pitch adjustment of each note within a chord to minimize dissonance between them. The default value is Tempered i.e. standard (Western) keyboard tuning.

System

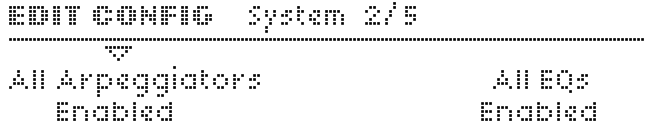


All Delays

> **Disabled, Enabled:** Global switch to disable / enable any Delay effects.

All Reverbs

> **Disabled, Enabled:** Global switch to disable / enable any Reverb effects.

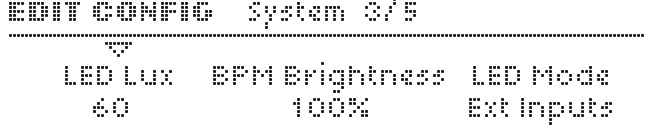


All Arpeggiators

> **Disabled, Enabled:** Global switch to disable / enable any Arpeggios.

All EQs

> **Disabled, Enabled:** Global switch to disable / enable any EQ settings.



LED Lux

> **0 to 127:** Brightness of all LEDs.

BPM LED Brightness

> **0% to 100%:** Relative brightness of the BPM LED.

LED Mode

Specifies what the LFO1 and LFO2 LEDs at the top of the MODULATORS section will indicate.

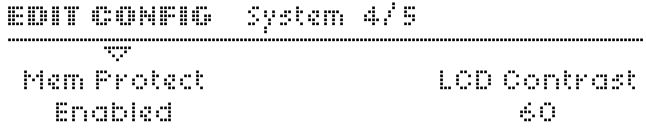
> **LFO:** The default value. LED intensity follows LFO oscillation.

> **Ext Inputs:** LED intensity shows the level of external input.

> **Auto:** Either of the above, depending on whether there is a signal at the inputs.

> **Output1, Output2, Output3:** LED intensity shows output levels.

> **Voice Steal:** Indicates note-stealing (see glossary). LED intensity follows the immediate levels of notes being stolen.



Mem Protect

> **Disabled:** Data can be stored.

> **Enabled:** Full memory protect – no data can be overwritten.

LCD Contrast

> **0 to 127:** Optimize the display for different viewing angles.

Remote Mode

Determines what the MASTER VOLUME knob will control in while in Remote mode (see “REMOTE” on page 125).

> **Volume>Virus:** As in the other modes i.e. it will control output levels of the Virus.

> **Volume>MIDI:** The MASTER VOLUME knob will send MIDI CC#7 (Volume) data.

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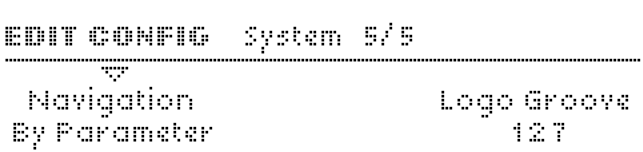

Navigation

Determines how the PARAMETERS buttons work while navigating within menus.

> **By Page:** Scroll through pages. SHIFT+PARAMETERS will move the cursor within each page.

> **By Parameter:** Move the cursor within the page (or across page boundaries). SHIFT+PARAMETERS will scroll through pages.

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6: Multi Mode Reference

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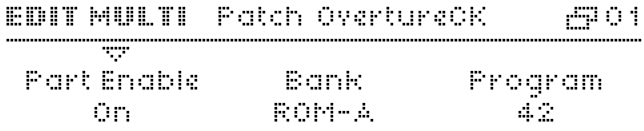
In earlier Virus models, Multi mode programs consisted of 16 Parts, each one **referencing** a Single program. The downside: Multi programs depended on the location of all their referenced Singles, so if you changed any program while working in Single mode, Multi programs would change accordingly.

In the Virus TI however, each of the 16 Parts actually **contains** the equivalent of a Single program. Parts also require a few additional parameters (e.g. transposition, keyboard range) which are all accessed via MULTI EDIT – hold down SHIFT and press the master EDIT button to the left of the display. From operating system revision 1.1 onwards, there is another 112 referencing Multi mode programs in order to supply you with old and newfashion Multi mode program. The additional programs can be accessed on slot 17-127.

Patch



The Bank and Program parameters in the first page are used to copy existing Singles into the current Part. If you do this by mistake, just press UNDO before adjusting any other parameters. Tip: Save your Multi programs regularly.

Part Enable

> **Off, On:** Specifies whether the selected Part is active.

Bank

Also directly available from the panel when this menu is closed via SHIFT + PARAMETERS.

> **A to T:** Selects the bank from which a Single program is automatically copied into the current Part.

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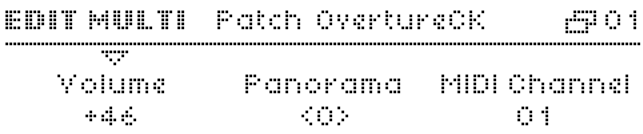
Program

Can be stepped when this menu is closed via SHIFT + VALUE.

> **0 to 127:** Selects the Single program to be automatically copied into the current Part.



Volume

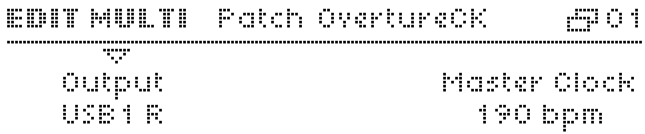
> **-64 to +63:** Bipolar parameter for balancing levels between different Parts.

Panorama

> **-64 to +63:** Stereo position of the Part. Overrides/overwrites the Single parameter of the same name (see “Panorama” on page 129).

MIDI Channel

> **01 to 16:** The MIDI channel to which this Part will respond.



Output

Specifies Part output:

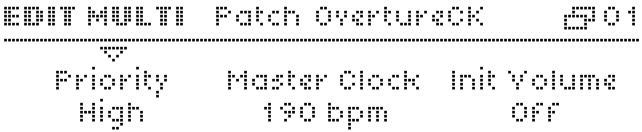
> **Out1 L ... Out3 R:** Sends this Part to the selected analogue output jacks.

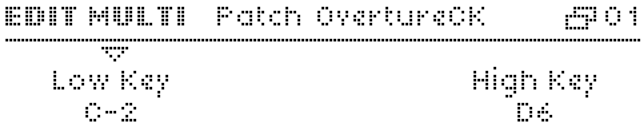
Transpose

> **-48 to +48 semitones:** Part transposition. Adds/subtracts from the Single parameter of the same name (see “Transpose” on page 129).

Detune

> **-64 to +63:** Tunes all pitched elements (oscillators, filters) within a fairly narrow range.





Priority

> **Low, High:** Specifies whether note-stealing (see glossary) will favour the current Part when all voices in the Virus have been used up. The Virus TI has plenty of voices and applies a very clever note-stealing algorithm, so you should seldom (or never) notice this happening.

Master Clock

> **63 bpm to 190 bpm:** Specifies the tempo in Multi mode. Note: this is adopted by all Parts, ignoring individual Tempo values of the original Single Mode programs (see “Tempo” on page 129).

Init Volume

> **Off, 1 to 127:** Initializes MIDI volume (CC#7) for the current Part whenever this Multi program is selected. See Volume RX below.

Low Key

> **C-2 to G8:** The lowest MIDI note to which this Part will respond. If this is set higher than High Key (see below), the range between Low Key and High Key is disabled, and all notes outside this range are enabled.

High Key

> **C-2 to G8:** The highest MIDI note to which this Part will respond. If this is set lower than Low Key (see above), the range between Low Key and High Key is disabled, and all notes outside this range are enabled.

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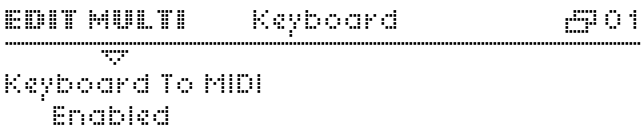
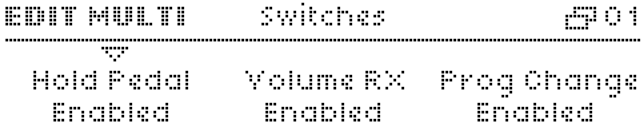


Keyboard to MIDI

Only available in keyboard versions (TI keyboard, Pølar). See “Keyboard” on page 155.

> **Disabled, Enabled:** Specifies whether notes played on the keyboard will also be sent to MIDI OUT.



Hold Pedal

> **Disabled, Enabled:** Specifies whether the Part will respond to MIDI CC#64 (usually a Sustain Pedal).

Volume RX

> **Disabled, Enabled:** Specifies whether the Part will respond to MIDI CC#7 (Volume).

Prog Change

> **Disabled, Enabled:** Specifies whether the Part will respond to MIDI Program Change messages. The global “Program Change” parameter in the CONFIG menu is ignored.

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7: Appendix A - Legal Declarations

This device is designed exclusively for generating low frequency audio signals. Any other use is not permitted, and automatically invalidates the warranty supplied by Kemper Digital GmbH.

COMPLIANCE

FCC INFORMATION (U.S.A)

IMPORTANT NOTICE: DO NOT MODIFY THIS UNIT! This product, when installed as indicated in the instructions contained in this manual, meets FCC requirements. Modifications not expressly approved by KEMPER DIGITAL GMBH may void your authority, granted by the FCC, to use this product. IMPORTANT: When connecting this product to accessories and/or another product use only high quality shielded cables. Cable/s supplied with this product MUST be used. Follow all installation instructions. Failure to follow instructions could void your FCC authorisation to use this product in the USA.

NOTE: This product has been tested and found to comply with the requirements listed in FCC Regulations, Part 15 for Class „B“ digital devices. Compliance with these requirements provides a reasonable level of assurance that your use of this product in residental environment will not result in harmful interference with other electronic devices. This equipment generates/uses radio frequencies and, if not installed and used according to the instructions found in the user manual, may cause interference harmful to the operation of other electronic devices, Compliance with FCC regulations does not guarantee that interference will not occur in all installations. If this product is found to be the source of interference, which can be determinated by turning the unit „OFF“ and „ON“, please try to eliminate the problem by using one of the following measures: Relocate either this product or the device that is being affected by the interference. Utilise power outlets that are on branch (Circuitbreaker or fuse) circuits or install AC line filter/s. In the case of radio or TV interference, relocate/reorient the antenna. If the antenna lead-in is 300 ohm ribbon lead, change the lead-in to coaxialtype cable. If these corrective measures do not produce satisfactory results, please contact the local retailer authorised to distribute this type of product. The statements above apply ONLY to products distributed in the USA. ACCESS VIRUS TI Version 1. 191 FCC Information (CANADA)

FCC INFORMATION (CANADA)

The digital section of this apparatus does not exceed the „Class B“ limits for radio noise emmissions from digital apparatus set out in the radio interference regulation of the Canadian Department of Communications. Le present appareil numerique n’emet pas debruit radioelectriques depassant les limites applicables aux appareils numerique de la „Class B“ prescrites dans la reglement sur le brouillageradioelectrique edicte par le Ministre Des Communication du Canada.This only applies to products distributed in Canada. Ceci ne s’applique qu’aux produits distribues dans Canada.

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OTHER STANDARDS (REST OF WORLD)

This product complies with the radio frequency interference requirements of the Council Directive 89/336/EC.

Cet appareil est conforme aux prescriptions de la directive communitaire 89/336/EC.

Dette apparat overholder det gaeldenda EF-direktivvedroren-dareadiostoj.

Dieses Gerät entspricht der EG-Richtlinie 89/336/EC.192

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DECLARATION OF CONFORMITY

The following devices

ACCESS VIRUS TI DESKTOP
ACCESS VIRUS TI KEYBOARD
ACCESS VIRUS TI POLAR

are hereby declared to conform with the requirements of Council Directive 89/336/FWG for radio frequency interference. They also comply with regulations dated August 30th, 1995 concerning radio interference generated by electronic devices.

The following standards have been applied:

EM 50 082-1 : 1992 , EN 50 081-1 : 1992 , EN60065 : 1993

This declaration has been given responsibly on behalf of the manufacturer:

Kemper Digital GmbH
Königswall 6
45657 Recklinghausen
Germany

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WARRANTY REGULATIONS

The Kemper Digital GmbH warranty covers all defects in material and workmanship for a period of 24 months from the date of original purchase. This warranty does not cover defects due to abuse, faulty connections or operation under other than specified conditions. Warranty coverage is also voided when the device is repaired by unauthorized persons or tampered with in any way. Kemper Digital reserves the right to refuse warranty claims, if the product was not sold from an Authorised Base Dealer to the respective end-customer. This warranty is limited to replacement or repair of the product. It does not limit the customers' rights according to the current product liability regulations of the country where the product was purchased. The warranty is only valid, if a completely filled in warranty card, including serial no., date of sale, company stamp, signature of the Authorised Base Dealer, as well as name and address of the customer is returned to the address given below. If a defect occurs during the warranty period, contact the Autorised Base Dealer from whom you bought the synthesizer, or contact us directly using the forms on the Access website.

The synthesizer can only be returned **upon prior approval** and the following requirements have to be fulfilled:

- The unit is sent in its original package or one of equal quality.

- A detailed description of the defect and a copy of the purchase receipt is included.

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8: Appendix B - Glossary

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Glossary

Most of the “definitions” below only apply to synthesizer technology or even specifically to the Virus.

A

- **Adaptive Control Smoothing (ACS)**

  Smooth but rapid interpolation of parameter changes to eliminate zipper noise.

- **Additive synthesis**

  Method of creating sounds by summing simple waveforms (usually sine waves). Complex sounds therefore require many oscillators. See also *Subtractive synthesis*.

- **Aftertouch**

  Obsolete term for either *Channel Pressure* or *Key Pressure*.

- **Allpass filter**

  Type of *filter* which does not remove frequencies from the signal, but only affects its *phase*.

- **Amount**

  How much a modulation source affects its destination.

- **Amplitude**

  A non-scientific definition would be: loudness, level, volume etc..

- **Arpeggiator, Arpeggio, Arp**

  In classical music, Arpeggio means you should play the notes of a chord in rapid succession instead of all at once. In the synthesizer world, Arpeggiators are clocked processors that turn chords into (usually) repeating sequences.

- **Attenuation**

  Reduction of *amplitude* etc.. Usually measured in *dB*. Opposite of *Gain*.

B

- **Balance**

  Simultaneous control over the relative levels of two signals. See also *cross-fade*.

- **Bandpass filter (BP)**

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Filter which passes a range (band) of frequencies while rejecting others outside this range.

- **Bandstop filter (BS)**

  Also called notch filter or band reject filter. Practically the opposite of a bandpass filter i.e. rejects a range of frequencies while passing others outside this range.

- **Beating**

  Rhythmic effect usually caused by two oscillators almost (but not quite) in tune with each other. Noticeable beating also occurs between sine oscillators that are nearly an octave, fifth or fourth apart.

- **Bipolar**

  Possible values can be negative as well as positive. This term can apply to *Amounts* as well as modulation sources (e.g. LFOs, Pitch Bender, Key Follow).

- **Bus**

  A common (i.e. available to several sources at once) audio signal path used for routing purposes.

C

- **Carrier**

  Term borrowed from FM radio (the dial adjusts carrier frequency) meaning the oscillator being frequency-modulated by another. Also used for the audible signal from a vocoder, which “carries” the formants of another signal e.g. your voice. See also *modulator.*

- **Category**

  Classification of programs e.g. Bass, Lead, Drums etc..

- **CC (two-digit number)**

  MIDI continuous controller number. MIDI standard index of physical controls. Several of these numbers have been specified e.g. Modulation wheel = CC 01, volume control = CC 07, hold/sustain pedal = CC 64 etc.. The list of sources in the Virus modulation matrix includes several of these.

- **Channel Pressure**

  Monophonic Aftertouch (often simply called Aftertouch). MIDI data caused by pressing harder on the keyboard after playing notes. See *Key Pressure*.

- **Clock**

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Regular signal used for synchronization purposes (e.g. LFOs, delay times etc.).

- **Color, Coloration**

  Parameter affecting the cutoff frequency of a simple filter e.g. in the Noise generator or Delay/Reverb tails.

- **Continuous Controller**

  See *CC*.

- **Contour**

  In the Virus: A continuous parameter determining the shape of an LFO.

- **Cross-fade**

  Term borrowed from cinematography: when two successive sounds are mixed in such a way that they appear to blend smoothly from one to the next.

- **Crotchet (1/4 note)**

  Classical term for the length of one beat (as in bpm = beats per minute).

- **Cutoff**

  Threshold frequency of a filter above and/or below which frequencies are attenuated or boosted. *Resonance* accentuates frequencies close to the cutoff point.

- **Cyclic**

  Recurring regularly e.g. an LFO when not in envelope mode. Also called “periodic”.

D

- **dB (Decibel)**

  Relative unit of *attenuation* or *gain*.

- **Destination**

  Carrier or target of a *modulation.* See also *Source*.

- **Detune**

  Fine tuning of oscillators.

- **Dissonance**

  Opposite of harmony.

- **Dry**

  Untreated portion of an audio signal in any effect module (e.g. chorus, reverb).

- **DSP**

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Digital Signal Processor. Practically all modern hardware synthesizers are based on DSP chips, not on standard computer CPUs (Pentium, Athlon etc.).

E

- **Edit Buffer**

  Area of memory (RAM) used to temporarily hold program data. Whenever a program is selected, its data is copied into an edit buffer and then used to generate the sound.

- **Envelope**

  Synthesizer module originally used to simulate the way a note appears and fades out. Can also be used for many other purposes (e.g. filter cutoff, pitch).

- **EQ, Equalizer**

  A set of filters used to modify the spectrum of a sound, either for creative effect or as a corrective.

F

- **Feedback**

  A loop in any signal path e.g. feeding the output of a delay back into its own input.

- **Filter**

  Module present in all subtractive synthesizers used to pass certain frequencies while rejecting / attenuating others.

- **Filter saturation**

  See *Saturation.*

- **Full wave rectification**

  Signal process that results in half of the signal (upper or lower) being fully inverted. An often subtle but useful effect available in the Saturation stage (for each individual note) as well as in the Effects section (Distortion is applied to the overall signal). See “Rectifier, Rectification” on page 187.

- **FM**

  Frequency Modulation (e.g. FM radio, FM synthesis). Pitch modulation when the source and destination are both audio signals, resulting in a compex tone.

- **Frequency**

  Speed of oscillation. Measured in *Hertz (Hz)*. Human hearing ranges from about 30 to 20.000 Hz.

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G

- **Gain**

  Increase of *amplitude* etc.. Usually measured in dB. Opposite of *Attenuation.*

- **Glide**

  See *Portamento.*

- **Global parameter**

  A *parameter* affecting the entire synthesizer (e.g. Knob Response, MIDI Device ID etc.). Press the CONFIG button on your Virus TI to adjust global parameters.

H

- **Harmonic Series**

  All frequencies in a sound (i.e. the partials) which are integer multiples of the fundamental. Starting at A 440, the harmonic series would therefore be 440 Hz, 880 Hz, 1320 Hz, 1760 Hz etc..

- **Hermode Tuning**

  Method of maximizing harmony between all notes in a chord by applying slight pitch adjustments in realtime. For information about the problem this method addresses, search for the “Comma of Pythagoras” in the Internet.

- **Hertz (Hz)**

  Measurement of *frequency*. Formerly called cps = cycles per second.

- **Hoover™**

  Term borrowed from a household appliance company to describe a distinctive, fuzzy sound often used in electronic dance music. The HyperSaw oscillator model in your TI gives you instant access to such sounds.

I

- **Interactive**

  Two or more parts of any system capable of affecting each other, e.g. a conversation - or synthesizer modules.

- **Impulse**

  Signal with a very short peak e.g. a very narrow pulse wave or an envelope with zero decay.

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K

- **Key Follow**

  Modulation source proportional to the MIDI note number i.e. which key you play.

- **Key Pressure**

  See *Polypressure*.

L

- **Layer**

  Two or more sounds played in unison. Achievable in Multi mode by setting PARTs to the same MIDI channel.

- **LED (Light Emitting Diode)**

  Electronic component often used for displaying switch status on instrument panels. Most of the LEDs on the TI desktop are red, those on the Pølar are white.

- **LFO (Low Frequency Oscillator)**

  Generally used as a cyclic modulation source, the LFOs in the Virus can alse serve as “one shot” envelopes (when set to Envelope Mode).

M

- **Mark-Space-Ratio**

  See *Pulse Width*.

- **MIDI**

  Acronym for Musical Instrument Digital Interface. The standard protocol used for communication between electronic musical instruments and computers.

- **MIDI Feedback Loop**

  Problem caused by e.g. the following situation: MIDI output is connected to MIDI input on the same device (via any route, e.g. through a computer and back again). If MIDI input is also mirrored at MIDI output (see “Soft Thru” on page 153), this will cause data feedback.

- **Mode**

  Generic term for any exclusive, switchable “type” or fundamental way of working.

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■ **Modular**

Composed of discrete elements (modules) that can be arranged in different ways.

■ **Modulation**

Any process by which a signal (e.g. *LFO*) or control source (e.g. a *modulation wheel*) is used to modify a *parameter*. The controlling signal is referred to as the *Modulator* and the controlled signal as the *Carrier*. In the Virus, these are more usually referred to as *source* and *destination*.

■ **Modulation Wheel**

General-purpose performance control first seen on the Minimoog™. Often used for controlling *vibrato* depth.

■ **Modulator**

Any source of *modulation*. See also *Carrier*.

■ **Monophonic (Mono)**

Only one note can be played at a time e.g. flute, Minimoog™. See *Polyphonic*.

■ **Multi Mode**

Synthesizer mode in which more than one complete sound (e.g. Single program) can be generated simultaneously. Also implies that the synth can receive over several MIDI channels at once.

N

■ **Noise**

Waveform consisting of a theoretically infinite and continuous range of frequencies.

■ **Nominal**

In name only. For synth parameter values, this usually means the value as you set it, disregarding any subsequent modulation.

■ **Note Stealing**

When the number of played notes exceeds the maximum number of *voices* a synthesizer is capable of generating, older notes must be “stolen” i.e. cut short for the sake of newer notes. All Virus operating systems use an advanced note-stealing algorithm, so this is seldom if ever heard.

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O

- **Octave**

  A musical interval 12 semitones apart e.g. C1 to C2.

- **One-Shot**

  Non-cyclic, of finite length. See also *Cyclic*.

P

- **Panorama (Pan)**

  Traditionally, the position of an audio signal in a stereo field i.e. the left/right volume ratio.

- **Parallel**

  Routing term: Not connected one after the other (see *Serial*), but alongside each other.

- **Parameter**

  In general: Any variable element within a system. The values of parameters define how the system will function.

- **Part**

  In the Virus TI Multi mode: One of the 16 separate sound engines.

- **Patch**

  The arrangement of physical connections in e.g. a telephone routing system. For modular synthesizers, this also includes all knob and switch settings. Now that synthesizers can memorize such data, “patch” has become synonymous with program, sound etc..

- **Phase, Phase Angle**

  The position within one cycle of a wave. Measured in degrees, whereby 360° is the end of the cycle.

- **Phaser**

  Audio processor that shifts the phase of a signal and mixes this with the original for an illusion of motion similar to the Doppler Effect (e.g. a passing ambulance or a rotary speaker cabinet).

- **Pitch**

  Frequency (e.g. how low/high a note is). Pitch is mainly used for musical notes, while *frequency* is the more scientific and generic term.

- **Pitchbend**

MIDI data usually derived from the sprung wheel (stick, lever) to the left of a MIDI keyboard. Note that Pitchbend (like *Channel Pressure*) is not actually one of the *Continuous Controllers*.

- **Pole**

  Units of -6dB per octave in filters – so e.g. a 4-pole filter has a slope of -24dB per octave. This term has its roots in ladder filter design, which uses several identical building blocks (“poles”) arranged in series.

- **Polyphonic, Poly**

  Usually: Several notes can be played at the same time. Can also describe any synthesizer module which has as many instances as the number of notes being played – in the Virus, the envelopes are polyphonic, the EQ is monophonic, the LFO1 and LFO2 can be either. See *Monophonic*.

- **Polypressure**

  Also called Polyphonic Aftertouch or Key Pressure. Independant MIDI data relative to the pressure applied to keys on a keyboard. Rarely implemented because pressing on several keys at once can result in too much MIDI data for a system to handle. In the Virus, this data format is used for a purpose not intended by the original MIDI specifications – as a supplement or alternative to *System Exclusive* (Sysex) data. See also *Channel Pressure.*

- **Portamento**

  Classical term for gliding pitch from one note to the next. Often simply called “glide” in synthesizers.

- **Preset**

  Ready-to-use sound i.e. one that is already programmed into the synthesizer before leaving the factory. Often used more loosely as a synonym for patch, sound, *program* etc..

- **Program**

  The term used by Access for individual sounds / patches. See *Patch*.

- **Pulse wave**

  Oscillator waveform alternating between two discrete levels.

- **Pulse Width**

  The ratio between the lengths of the upper and lower levels in a pulse wave. Often given as a percentage.

Q

- **Quality (Q)**

  Term describing the slope of a filter band (usually in an equalizer). Often misused as a synonym for *Resonance*.

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■ **Quaver**

Classical term for the length of a note equal to half of a *Crotchet*.

R

■ **Rate**

Speed.

■ **Rectifier, Rectification**

Type of signal processing where one half (either upper or lower) of a signal is inverted (see “Full wave rectification” on page 181) or zeroed (half wave rectification). The Virus offers full wave rectification.

■ **Resonance**

Boosting of frequencies close to the cutoff point in a filter (originally via *Feedback*). This term derives from the distinctive frequency “formants” caused by physical attributes of acoustic instruments e.g. a piano or acoustic guitar.

■ **Ring Modulator (Ringmod)**

Synthesizer module which multiplies two signals, often creating bell-like tones.

S

■ **Sample and Hold (S+H)**

A clocked processor which takes a regular sample of input levels and holds this until the next clock (so the output is stepped). Sample and Hold is a random source in the Virus LFOs because its input is always noise.

■ **Sample and Glide (S+G)**

Sample and Hold, but smoothed.

■ **Saturation**

Usually: The smooth distortion caused by overloading a filter input or magnetic tape.

■ **Semiquaver**

Note length: Half a *Quaver*, one quarter of a *Crotchet*.

■ **Semitone**

Pitch interval equal to one twelvth of an *Octave*. The keys on a keyboard are a semitone apart.

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■ **Serial (in series)**

Routing term. The signal is sent to one module (e.g. a filter), which in turn sends its output to another module (e.g. another filter). See also *Parallel*.

■ **Slave**

Module with reduced functionality (following parameters set by another module). In the Virus, oscillator 3 is partly a “slave” of oscillator 2.

■ **Slot**

In the Virus: individual modulation matrix routing module.

■ **Sound engine**

That part of a synthesizer responsible for generating sound.

■ **Source**

See *Modulator*.

■ **Square wave**

Special form of *Pulse* wave in which the *Pulse Width* is exactly 50%.

■ **Subtractive synthesis**

Often called Analogue Synthesis. The method of creating sounds by removing (subtracting) frequencies from relatively complex waveforms. See also *Additive synthesis*.

■ **Sync**

Synchronization. In oscillator sync, one oscillator resets the phase of another (usually whenever it crosses zero in the positive direction).

■ **Sync Phase**

See *Sync* above. An Assign Target for LFO3 in the Virus, this is the *phase angle* to which oscillator 2 is reset.

■ **System Exclusive (Sysex)**

Device-specific MIDI data used for transferring patches, editing parameters via computer etc..

T

■ **Template**

A ready-to-use blueprint, model, stencil etc.. In the Virus TI: a preset for remote control of external devices using the Virus knobs.

■ **Tremolo**

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Cyclic amplitude modulation similar in effect to *Vibrato*.

- **Toggle**

  Switch between two distinct states e.g. on/off, mono/poly etc..

U

- **Unipolar**

  Possible values can only be positive or negative, the range does not include both. This term can apply to *Amounts* as well as modulation sources (e.g. envelopes, channel pressure).

- **Unison**

  Several instances of the same note at the same time.

V

- **VA**

  Acronym for Virtual Analogue. Traditional subtractive synthesis emulated via software.

- **Vibrato**

  Cyclic pitch modulation (usually around 5Hz). LFO3 is the most common source of vibrato in the Virus.

- **Vocoder**

  “Voice Encoder”: Device often used to impose the formant characteristics of the human voice onto other signal. Originally developed to reduce the bandwidth of speech signals for communication purposes.

- **Voice**

  A complete sound-generation and shaping unit (oscillator, fileter, envelope, LFOs etc.). A *monophonic* synthesizer has only one voice, *Unison* mode uses up 2 or more voices per note.

W

- **Waveshaping**

  Applying a distortion (“transfer function”) to a signal for complex timbral modification.

- **Wet**

  The treated (e.g. reverb) portion of a sound i.e. without the original *dry* signal.

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Z

Zipper Noise

Generally unpleasant audio artifacts usually caused by quantized modulation. Eliminated in the Virus via *Adaptive Control Smoothing*.

9: Appendix - Patch Names

ROM-A

000 T I BC	001 Alead BC	002 AoilioA BC	003 BadmouthBC	004 BassSoupBC	005 BelisimoBC	006 BellfireBC	007 BigPipe BC
008 BombasdrBC	009 BothEndsBC	010 BotlStr BC	011 Britl5thBC	012 BumFluf BC	013 BusyKeysBC	014 Cables BC	015 Caustic BC
016 ChimePadBC	017 ChoirBelBC	018 Cicadia BC	019 Clouds BC	020 ColdMetlBC	021 Crazike BC	022 DampPtchBC	023 DirtyPlsBC
024 DivngBelBC	025 DualiTl BC	026 EnvBass BC	027 Euqria BC	028 FloBass BC	029 Flylead BC	030 FMeUp BC	031 FormerloBC
032 Glacier BC	033 GlasofonBC	034 GloWormsBC	035 GritFunkBC	036 GrokBassBC	037 GrokLeadBC	038 HardwearBC	039 HellGateBC
040 HypaFlowBC	041 HypaHypeBC	042 HypassorBC	043 Hysaws BC	044 Intim8 BC	045 InvisiPdBC	046 Ioead BC	047 Lacer8r BC
048 Laquis BC	049 LatentBsBC	050 Launch BC	051 Majiko BC	052 Manga BC	053 Melene BC	054 Metelec BC	055 MetlFunkBC
056 Misty BC	057 MoonbugsBC	058 MWQuant BC	059 MWRingMdBC	060 Nanules BC	061 NasTl BC	062 Nenoa BC	063 NeoSphr2BC
064 NewkLeadBC	065 Nitrous BC	066 OverblowBC	067 Petite BC	068 PhatBrazBC	069 Pianu BC	070 PipSqw3kBC	071 PizzArp BC
072 Plang BC	073 PolutionBC	074 ProdLd1 BC	075 Pulsaw BC	076 PulsFadeBC	077 Punchy BC	078 Punctu8 BC	079 RailingsBC
080 RezbiantBC	081 RingOrgnBC	082 SatuBassBC	083 Sekur BC	084 SempliceBC	085 Shortie BC	086 Simsuki BC	087 Slash BC
088 Sledge BC	089 Slinka BC	090 Sqr Arp BC	091 StabLeadBC	092 SteamWavBC	093 SupaSyk BC	094 Syk BassBC	095 Syncer BC
096 SyncloneBC	097 SynEns BC	098 Syrys BC	099 Teknoid BC	100 ThebuTl BC	101 Thr3sum BC	102 Thryba BC	103 Torus BC
104 Touchy BC	105 TuchFunkBC	106 TwinVox BC	107 UltraSawBC	108 UpMalletBC	109 VelbendaBC	110 VelBouncBC	111 Veldisa BC
112 VelevateBC	113 VelFmBasBC	114 VelocrysBC	115 Vogue2 BC	116 WarmWavsBC	117 WavePad BC	118 WhoPad BC	119 WT S+H BC
120 WT1 + BC	121 Xaris BC	122 Xianum BC	123 Yaquis BC	124 Zimoux BC	125 >>INPUT<<	126 -START-	127 -INIT-

Patches by Ben Crosland (BC)

ROM-B

000 64Degee MS	001 A.Pop MS	002 AcidChrdMS	003 Adagio MS	004 AirTonicMS	005 AmbulantMS	006 Anubis MS	007 Atx BassMS
008 BabyloneMS	009 Bad Pop MS	010 BigBeat MS	011 BigPhaseMS	012 BittBassMS	013 Bomber MS	014 Brasso MS	015 ButtrflyMS
016 By Zero MS	017 Chapel MS	018 CharactrMS	019 CoderArpMS	020 CoderPadMS	021 CoolChrdMS	022 CreamPikMS	023 CrysalisMS
024 Cubus MS	025 CultOrgnMS	026 D-Phunk MS	027 D50Lead MS	028 DarksideMS	029 DeepWeepMS	030 DirtBox MS	031 DistPickMS
032 DromeCrdMS	033 DuskwoodMS	034 E-Lead MS	035 FizzBizzMS	036 Flutex MS	037 Flutex2 MS	038 FM BoostMS	039 ForgivenMS
040 Freaks MS	041 Frogger MS	042 FunkBassMS	043 FunkTripMS	044 Gamelan MS	045 Genosis MS	046 GianaArpMS	047 GlobalDJMS
048 Go Rave!MS	049 Halo MS	050 HappyVoxMS	051 HarakiriMS	052 Haunted MS	053 HihatRunMS	054 HiScore MS	055 Holland MS
056 Horror! MS	057 HyperSawMS	058 HyperSqrMS	059 J Halen MS	060 Jessel MS	061 KetamineMS	062 Lately MS	063 Ligaya MS
064 Linear MS	065 LoFi SawMS	066 LoFi-WhaMS	067 LoGrooveMS	068 Lovly80sMS	069 MayaFireMS	070 Megane MS	071 Mettler MS
072 MnstrSawMS	073 MnstrSw2MS	074 MotoSyncMS	075 MovinPadMS	076 MutePickMS	077 NarcoticMS	078 Noomed MS	079 Noomed2 MS
080 noToy MS	081 NuNrg MS	082 OberBrssMS	083 OiOiBassMS	084 OktaviusMS	085 OrchBlstMS	086 PhoneSqrMS	087 PhonoboyMS
088 PlastoneMS	089 PsyBat MS	090 PulvrTrmMS	091 PuristicMS	092 RelativeMS	093 RePunch MS	094 RezoBassMS	095 SadSaws MS
096 Saw You MS	097 Schilla MS	098 Sharp MS	099 Sick SQ MS	100 SinePad MS	101 SlowSilkMS	102 SoftBassMS	103 SpheroidMS
104 Stack X MS	105 Step64 MS	106 SunPianoMS	107 SupaCoreMS	108 SuperWrmMS	109 TchnolgcMS	110 The Bug MS	111 Theory MS
112 TiberiumMS	113 TlBuzzerMS	114 Tracker MS	115 TriblZapMS	116 UpliftFXMS	117 Vanish MS	118 Vogue MS	119 Voltage MS
120 Voxiter MS	121 WidePad MS	122 Wind MS	123 Wurly MS	124 X-Mod MS	125 XylotronMS	126 YamahFB1MS	127 Zapper MS

Patches by Manuel Schleis (MS), www.vengeance-sound.com

ROM-C

000 3-Dumm HS	001 60sSciFiHS	002 68-CreakHS	003 Aah-Vln HS	004 Acidica HS	005 AnlogBD HS	006 AnyMusicHS	007 AutobahnHS
008 BadCntaxHS	009 Baryon HS	010 Bombers HS	011 Brash HS	012 Cadmium HS	013 Clox HS	014 CutBrassHS	015 CuttaD6 HS
016 Cyber2 HS	017 D50-50 HS	018 D=CM+1 HS	019 DaBirds HS	020 DayDreamHS	021 DinoArp HS	022 Dis-Go HS	023 Doyoyng HS
024 Droned HS	025 DuckDivrHS	026 Dworg HS	027 DX-File HS	028 Elohim HS	029 EmPyre HS	030 EP+Faze HS	031 FilmTrpsHS
032 FlagshipHS	033 Flam&Co HS	034 FlatHat HS	035 Floooot HS	036 FlyingT HS	037 Funk-U HS	038 GlasBirdHS	039 GlasGlisHS
040 Gliss2 HS	041 Goudam HS	042 Handsaw HS	043 HardOne HS	044 HillAgesHS	045 ImpOsc02HS	046 ImpOsc03HS	047 IonFlux HS
048 Jester HS	049 Knock-B HS	050 Kofi-B HS	051 Kordeon HS	052 LA Lore HS	053 Latex 2 HS	054 Latinum HS	055 Lobster HS
056 LostLeadHS	057 Mandoid HS	058 MaxiMin HS	059 McCloud HS	060 McNasty HS	061 MoonriseHS	062 Movmnt2 HS	063 MowGrassHS
064 Nanites HS	065 Needles HS	066 NewStrumHS	067 Nocoder HS	068 OffTopicHS	069 Old Brs HS	070 PanDora HS	071 Phase 2 HS
072 Phazzah HS	073 Phloid HS	074 Pickles HS	075 PlecBassHS	076 Pluto HS	077 Polytix HS	078 PourDry HS	079 ProFit HS
080 ProWeed HS	081 Pstyro3 HS	082 PurrBassHS	083 PutzFrauHS	084 PyroFlowHS	085 Q+Fatty HS	086 Qricket HS	087 RezBass HS
088 Rigby2 HS	089 Riptide HS	090 ScrapyrdHS	091 SeaThreeHS	092 SirNevilHS	093 Sitar2 HS	094 Skrape HS	095 SlaplandHS
096 SleigherHS	097 SlipShotHS	098 Snakeye HS	099 SpaceP2 HS	100 Species HS	101 Squink HS	102 Stabber HS	103 StarBeesHS
104 StarFallHS	105 Sugar1 HS	106 Sugar2 HS	107 Sugar5 HS	108 SunChildHS	109 Synthar HS	110 Tack HS	111 TankYou HS
112 TinyBee HS	113 Torque HS	114 TownshipHS	115 Trancit HS	116 TrebleB HS	117 Trombic HS	118 Trumps HS	119 UnstableHS
120 VCSwolf HS	121 Vlhurgs HS	122 Warbell HS	123 Wendy+ HS	124 WetspaceHS	125 WndChimeHS	126 X-Mover HS	127 YouWish HS

Patches by Howard Scarr (HS)

ROM-D

000 S-1973 @	001 x(o-o)x @	002 38 S@ws	003 Aeternal @	004 An@gry	005 Anaklav1 @	006 Anaklav2 @	007 Anaklav3 @
008 AnlogFeel@	009 AprilPad@	010 AtariCr@sh	011 BeautySyn@	012 Before @	013 BellLead @	014 BlackHole@	015 BladeRun @
016 Bore@lis	017 BPF+2P! @	018 BrassKlav@	019 Bs2Pole! @	020 BsBuster @	021 BsKonKilr@	022 BsNoog @	023 BsSpiral @
024 BsTaurean@	025 BsWaveSel@	026 BukRogers@	027 CanHappen@	028 CommonTon@	029 CrstlCave@	030 Dancer @	031 Deinos @
032 DelayLama@	033 Dgtalrido@	034 DigiBel1 @	035 DigiBel2 @	036 DigiBel3 @	037 DigiBel4 @	038 Dimril @	039 DlayVerb!@
040 DoubleSyn@	041 Dragons @	042 DrownedP@d	043 DrummerG8@	044 Dryadae @	045 DubChrdsM@	046 DWBelComp@	047 ELP-ulse @
048 EP Res @	049 EP3DogNyt@	050 Fanfare @	051 FeedBkSyn@	052 Flangepad@	053 Foogpad2P@	054 Gently 1 @	055 Gently 2 @
056 GertLead @	057 Gruvalimb@	058 Halo Pad @	059 Hammono @	060 Harmoshn2@	061 Heroes @	062 Hi*Lo Seq@	063 Industron@
064 Laura @	065 LayerHold@	066 Ld-OB 82 @	067 Ld4Quincy@	068 LeedSneed@	069 LFantSqid@	070 LFOverkil@	071 LikeSkin @
072 LunarArp @	073 M@ Olympus	074 M@inTheBox	075 m@stock	076 Majman @	077 MalletStk@	078 Melodica @	079 MixChime @
080 Monterey @	081 MPianoHi @	082 MPianoLo@	083 NextOrbit@	084 Nocoder @	085 Noog 4P @	086 NumanesqM@	087 OrchBrass@
088 OrganDigi@	089 p-g Chime@	090 p-g Poly @	091 PatiencPd@	092 PerfectP@d	093 Phobos @	094 PizzaKato@	095 PoleNoise@
096 PowerPluk@	097 PPG Comp @	098 ProlesLog@	099 PVC Drum @	100 Quintesnc@	101 Quivery @	102 ReedPad @	103 RingDrone@
104 Shredder @	105 SineLang @	106 SnareG@te	107 SpAcEvOx @	108 Spiritu @	109 Spitter @	110 Splatter @	111 StpSeqMe!@
112 Stratpad @	113 StringSyn@	114 StViolate@	115 StViolint@	116 Terraform@	117 TouchGate@	118 TremThing@	119 TrippyPad@
120 TXStack86@	121 Upwards @	122 V-Organ @	123 Vampyr @	124 Venusian @	125 Warper @	126 Wind4p @	127 Wired @

Patches by Matt Picone (M@)

ROM-E

000 AcidArp M	001 AcidRain M	002 Anemone M	003 ArdeKey M	004 Atlantis M	005 BadBrain M	006 Beaker M	007 Beano M
008 Bhurly M	009 CashCrop M	010 Chimp M	011 Clockers M	012 ComeDown M	013 Cunted M	014 Dayz M	015 Diana M
016 DieSoon M	017 DigDoug M	018 DoubleD M	019 DubTest M	020 DuckFeet M	021 Dumbo M	022 Eastside M	023 Elevator M
024 Explora M	025 FarOut M	026 Fatass! M	027 Felcher M	028 FogHat M	029 Fonkah M	030 Forever M	031 Furley M
032 Gachet M	033 Gamera M	034 Ganja M	035 GasHuffa M	036 Gateman M	037 Ghoulie M	038 GoFigure M	039 GrapeApe M
040 Hesher M	041 Hideout M	042 Horror2 jh	043 Hoth M	044 HotKarl M	045 Hydra M	046 Icarus M	047 Industry M
048 Iodine M	049 Jaco M	050 Jahmekya M	051 JizzMop M	052 Junkie M	053 KoolFM M	054 Kuster M	055 Lando M
056 LastFix M	057 Lezzie M	058 LiquidSkyM	059 Lisbon M	060 Loner M	061 Lycra M	062 Majesty M	063 Malfunk M
064 Manga M	065 Mentor M	066 Mercury M	067 MethLab M	068 Midnite M	069 Monkfish M	070 Monument M	071 Moonie M
072 Mosquito M	073 Mothra M	074 Move M	075 Napalm M	076 Nebula M	077 NewYork M	078 NextKin M	079 NO2Head M
080 PadThai M	081 Payback M	082 Petrol M	083 Phantom M	084 PopTart M	085 PorkPie M	086 Pulsine M	087 Python M
088 Quazar M	089 Rasberry M	090 RatSync M	091 RedAlert M	092 Reminise M	093 Resin M	094 Rezonard M	095 Roaches M
096 Rodan M	097 Sandman M	098 Seagull M	099 SheMale M	100 Simplex M	101 SkiMask M	102 Skylab M	103 Slayer M
104 Socrates M	105 SpaceVan M	106 Sparta M	107 Spaz M	108 Sqash M	109 StarDust M	110 Tasm1 M	111 Tasm2 M
112 Tasm3 M	113 TechKey1 M	114 TechKey2 M	115 Traffic M	116 TwinPeaksM	117 Undertoe M	118 Uranium M	119 Ursula M
120 Valium M	121 Vindaloo M	122 Visitor M	123 Westwego M	124 Wombat M	125 Wormzer M	126 Xanax M	127 Zest M

Patches by Matthew Stolley (M)

ROM-F

000 AndromdaHS	001 Arctis HS	002 AT-Mini HS	003 AwashBs HS	004 Backing HS	005 BadTape HS	006 Begin? HS	007 BellBoy BC
008 BerimTamHS	009 Boingy HS	010 BowBouncHS	011 Bronze HS	012 BubblX HS	013 CantburyHS	014 ChaosBelHS	015 Choir2 HS
016 ClubMed HS	017 Congoid HS	018 CptKork HS	019 Cremoma HS	020 DancePn HS	021 Dangelo HS	022 DB-Goer HS	023 DinoBassHS
024 Dirtron HS	025 Dr.What?HS	026 Dread-0 HS	027 Dublyoo HS	028 DX-Pno1 HS	029 DX-Pno2 HS	030 DX-Pno3 HS	031 Dynette HS
032 E-Grand HS	033 E.Rigby HS	034 Easter1 HS	035 EkoRoad HS	036 Everest HS	037 Expense HS	038 Flats HS	039 Flutes HS
040 Flutoon HS	041 Froese HS	042 FunctionHS	043 Ganges HS	044 GateRim HS	045 Goomby HS	046 Ham&X HS	047 Harpsie HS
048 Hektik HS	049 HissPad BC	050 J.Edgar HS	051 JamMini HS	052 Jawdan HS	053 JazRoad HS	054 JuicOrg HS	055 Kitchen HS
056 Latex HS	057 LordOrg HS	058 Macho HS	059 Manfman HS	060 MarkOne HS	061 MarsAtx HS	062 Meddle HS	063 MelloVl HS
064 MinorityHS	065 Monza HS	066 MoonWeedHS	067 Multasm HS	068 MW-StepsHS	069 Nowhere BC	070 NylSolo HS	071 Oboe HS
072 Oddigy HS	073 Old S&H HS	074 Orange HS	075 Oscar1 HS	076 Outpost HS	077 PanShakeHS	078 PataFiz HS	079 PeaceOrgHS
080 Picking HS	081 PickUp HS	082 PingOrg HS	083 Pit-Str HS	084 Pizza HS	085 PlukalogHS	086 PopCorn HS	087 Prions HS
088 Pstyro2 HS	089 Pumpah HS	090 Qatsi HS	091 Quack! HS	092 RadioG HS	093 Raspry HS	094 Saloon HS	095 Saxpet HS
096 Series3 HS	097 ShineOn HS	098 SidKid HS	099 SimSyn HS	100 SinSolo HS	101 Slapska HS	102 SpacePadSV	103 Spring HS
104 Spy HS	105 Squeeze HS	106 Squoid HS	107 Sunder HS	108 Tabloid HS	109 TheDome HS	110 Thustra HS	111 TimeStepHS
112 Tunnel HS	113 TuvaWeelHS	114 TweakMe HS	115 TwoOfUs HS	116 Untune HS	117 Vanilla HS	118 Voodoo HS	119 Vorwerk HS
120 Warlord HS	121 Wheee! HS	122 WishBom HS	123 WoodyBs HS	124 X-Didge HS	125 X-Werx HS	126 Xyrimba HS	127 Zorch HS

Patches by Howard Scarr (HS)

ROM-G

000 80'sStabBC	001 AmbienceBC	002 BanjArp BC	003 BassArp BC	004 BassMan1BC	005 BassMan2BC	006 Beans BC	007 BigLead BC
008 Bite Me BC	009 BluBotl BC	010 BottlPadBC	011 BriteArpBC	012 Burbler BC	013 BuzzBassBC	014 CellStabBC	015 CheezMe BC
016 ClaviKeyBC	017 CompressBC	018 DelivrncBC	019 DesolateBC	020 DigiSaw BC	021 DirtLeadBC	022 DublArp BC	023 Electro1BC
024 ElectrR1BC	025 ElectrR2BC	026 Epitaph BC	027 FlwLead BC	028 FlydCoptBC	029 Fritter BC	030 FunkMamaBC	031 FunnyLd BC
032 FuzzFM BC	033 GritBas1BC	034 GritBas2BC	035 HardBassBC	036 HardLeadBC	037 HarshArpBC	038 HedHuntrBC	039 HoloArp BC
040 HoloBassBC	041 Korgi BC	042 KraftAr1BC	043 KraftAr2BC	044 KraftAr3BC	045 KraftAr4BC	046 KraftAr5BC	047 KraftAr6BC
048 LktroArpBC	049 LktroPlkBC	050 Monday BC	051 Mooky BC	052 MPScreamBC	053 MuteArp BC	054 MWBrass BC	055 Navel BC
056 NewGBassBC	057 NiceKeysBC	058 NotchPlsBC	059 NotchSawBC	060 Ocean BC	061 OnRun BC	062 PercArp1BC	063 PercArp2BC
064 PercArp3BC	065 PlukArp1BC	066 PlukArp2BC	067 PlukTremBC	068 PPGdual BC	069 Randy BC	070 RezArp1 BC	071 RezArp2 BC
072 RingLedrBC	073 Saucer BC	074 SawMorf BC	075 Sear BC	076 ShortBasBC	077 ShortSawBC	078 Sighing BC	079 SoftArp1BC
080 SoftArp2BC	081 SoftArp3BC	082 StacArp1BC	083 StacArp2BC	084 SweetFA BC	085 Sweptre BC	086 SyncArp1BC	087 ThickPadBC
088 ThinPad BC	089 TremStabBC	090 VA1 BC	091 VA2 BC	092 VA3 BC	093 VA4 BC	094 VanOrch BC	095 VC ACID BC
096 VoxOct BC	097 VoxWave BC	098 WarmUp BC	099 WarpLeadBC	100 WetArp BC	101 WetBass BC	102 Whistle BC	103 Zappy BC
104 PhatKickBC	105 SatKick BC	106 DistKickBC	107 SnareMrfBC	108 AutoHat BC	109 TinFoil BC	110 HldPdHatBC	111 808 Cow BC
112 PercMorfBC	113 PercMrf2BC	114 RezDrum BC	115 RezPerc BC	116 Claps 1 BC	117 Claps 2 BC	118 PanLid1 BC	119 PanLid2 BC
120 AutoShkeBC	121 SineDiveBC	122 Klunk BC	123 Klang BC	124 Stick BC	125 Zap BC	126 LoFiHit BC	127 V Dog BC

Patches By Ben Crosland (BC)

ROM-H

000 AutoBendBC	001 Avenues JS	002 B-SquareBC	003 Back280sSV	004 Base MH	005 BC NewVoV3	006 BellAir MH	007 BlkvelvtSV
008 BusysawsSV	009 ChilloutJS	010 ChrunchyJS	011 ClubbassSV	012 ClubtoolBC	013 Comm basSV	014 CommerseSV	015 Contra BC
016 CosmicbsSV	017 CreameryBC	018 Cyclone JS	019 Da Funk BC	020 Dawn JS	021 Decay JS	022 Deep9thsBC	023 Devlish SV
024 DHR Amb BC	025 Digedi JS	026 Driver SV	027 Drmswpr SV	028 Duffer BC	029 Etheral SV	030 Far EastJS	031 FatWah BC
032 Five in1BC	033 FlyBy BC	034 FnkNastyBC	035 Freno BC	036 Fripper JS	037 Furrier BC	038 Future XSV	039 FuturwldSV
040 GarBass8BC	041 Girls SV	042 Glassey SV	043 Goatic SV	044 GoindownSV	045 GoodniteJS	046 Hifive SV	047 HOA Pad SV
048 Hollow JS	049 HongKongBC	050 Hoppin' SV	051 IndiArp BC	052 IntntentSV	053 Jazzy JS	054 JoeZolo BC	055 KatmanduJS
056 KingsizeJS	057 LatitudeSV	058 Let's goSV	059 Lite JS	060 LongskrtSV	061 Maja JS	062 Mamba JS	063 MentalitJS
064 MetalsynJS	065 Move it SV	066 MoveMyMBC	067 Muzzle BC	068 NasalbasSV	069 NewVoV4 BC	070 NoiztoyzJS	071 OctvHoprBC
072 OddgssaySV	073 OffSoft BC	074 Oil-crwlSV	075 Pad '77	076 PadAlertMH	077 Pathos BC	078 Peace BC	079 Pensive BC
080 Phlute JS	081 Pitchy BC	082 PlaycoolSV	083 PlugAsiaMH	084 Plugged JS	085 Polar JS	086 PolyGrovJS	087 PseudoTBSV
088 Pulsar SV	089 Q-Pad BC	090 RbbrHrp2BC	091 Red lineSV	092 ReflxshnBC	093 RepeaterJS	094 RestlessBC	095 Rezoid SV
096 Rezzer2 BC	097 Rise up!SV	098 RubbrHrpBC	099 S&HOrganBC	100 Sawz 2 SV	101 Sharp BC	102 Sickly BC	103 SilkArp SV
104 SinebassJS	105 SomethngSV	106 SpitfireJS	107 Spoiled SV	108 Spring SV	109 SpringPdSV	110 StellarpSV	111 StickyPdBC
112 SubmergeSV	113 SwingArpPS	114 T Pot BC	115 T-Axxe JS	116 Ten InchJS	117 ThirdEarJS	118 Tinycat SV	119 TiptaptuSV
120 TwotonesBC	121 UniVoV BC	122 V-Bells JS	123 Vapour SV	124 VindictrSV	125 Ritchie SV	126 ChoralisSV	127 PizzachiSV

Patches By Ben Crosland (BC), Cosmic Dreamer (SV), HJ Scheffler (JS) and Mikael Hansson (MH)

ROM-I

000 101-Sub RP	001 2-Burst RP	002 2-Chord RP	003 68-CreakHS	004 7thCord RP	005 80s RP	006 =BASS= RP	007 Acidica HS
008 AlfBass RP	009 AnyMusicHS	010 Arp-BD2 RP	011 B-Kewl SV	012 BabyBee HS	013 BandPad RP	014 Baryon HS	015 BasemineHS
016 Bass Me RP	017 Be-Two RP	018 Borgano SV	019 BPM-Pad RP	020 Chord-U RP	021 Club-To RP	022 Cord-1 RP	023 CuttaD6 HS
024 D=CM+1 HS	025 DaChurchSV	026 DarkTombSV	027 DeeBass RP	028 Dis-BD RP	029 DSP-V RP	030 Ease RP	031 eXtream RP
032 Fat-Sn. RP	033 FenderB RP	034 Filters RP	035 GlasStrgSV	036 Go Bass RP	037 Hawsch RP	038 Hendrix RP	039 Howner RP
040 Imposc03HS	041 IQsnare RP	042 K-Organ RP	043 Knock-B HS	044 Kofi-B HS	045 Kordeon HS	046 Latex 2 HS	047 Latinum HS
048 Lobster HS	049 LowKick RP	050 Mandoid HS	051 MAXWave RP	052 McCloud HS	053 McDonna SV	054 Mellotr.RP	055 Mistery RP
056 Mistik SV	057 MO-TJO RP	058 MooBass RP	059 Mover RP	060 MS-10 2 RP	061 MS-99 RP	062 NA Bass RP	063 NoiseAA RP
064 Not-Pad#RP	065 O-ME-2 RP	066 Oby-Pad RP	067 Oh Bee SV	068 Omnef RP	069 Oz-Lead RP	070 P-Lead RP	071 P-Organ RP
072 P6OO RP	073 Pac-it SV	074 Pad-Flg RP	075 Padings RP	076 Phasa RP	077 PickGTR RP	078 PolyPha RP	079 Pro-12 RP
080 ProWeed HS	081 PsychordSV	082 Q+Fatty HS	083 Q-Teck RP	084 QT-Soft RP	085 Raw Saw SV	086 RealFlutHS	087 Riptide HS
088 RoboPad RP	089 Sadings RP	090 SFX-X~ RP	091 SH-123 RP	092 SoLead RP	093 Sorry RP	094 Str-Arp RP	095 STR-II RP
096 Str-WoW RP	097 Strings RP	098 T-8 RP	099 T-Dream RP	100 TD-Seq RP	101 TE-T42 RP	102 Tec-Str RP	103 TecBass RP
104 TF Bass RP	105 The-BD2 RP	106 TheBirdsHS	107 Ting RP	108 Ti|Bell SV	109 Ti|LinerSV	110 TomBass RP	111 Torque HS
112 TranQ SV	113 V Cl.HH RP	114 V Op.HH RP	115 Varpeg RP	116 Velo-Me RP	117 VeloPEW RP	118 Vi-Rtro RP	119 Vichord RP
120 Vitar RP	121 Vo-Pad RP	122 VR-78 1 RP	123 VR-78 2 RP	124 Windo RP	125 X Mean RP	126 X0X Kck RP	127 Z-Keys SV

Patches By Cosmic Dreamer (SV), Howard Scarr (HS) and Rob Papen (RP)

ROM-J

000 AESound zs	001 AldoNovaM	002 AmbientBlJ	003 AmbientFXJ	004 ambiRgM zs	005 AnHigh M	006 Arcade BC	007 Atlas J
008 Attack! J	009 AutoTknoBC	010 B-Deep M	011 B-Foe M	012 BadLand M	013 Basslk M	014 basting zs	015 basting2zs
016 bigTung zs	017 Bleu! M	018 Blotto M	019 Bubble2 M	020 CappSt M	021 Cavsak M	022 cirqStb zs	023 CLEeeN M
024 Cloakin M	025 cutRes zs	026 decDATA1zs	027 decDATA2zs	028 decDATA3zs	029 deciDAT4zs	030 dirty zs	031 Donky BC
032 dopeEp zs	033 Dragon M	034 dropIT zs	035 drpBomb zs	036 Drubber BC	037 Dry Bass J	038 dstStep zs	039 Dubsak M
040 Dumb! M	041 Empira 2M	042 Entropie J	043 Everest J	044 Facial M	045 FePudn zs	046 FlutDrumBC	047 fnkStrg zs
048 GBEp3 zs	049 george2 zs	050 GooHat M	051 GotHAM! M	052 HIDEson M	053 HiWaves jh	054 IndustryBC	055 LepY2 zs
056 LepY3 zs	057 lootRng zs	058 Lost M	059 LowBass jh	060 marimba4zs	061 MeBad? M	062 Menace M	063 MONose zs
064 mostHih zs	065 Mr.Big jh	066 Mr.Foo M	067 Necro M	068 NoFuture M	069 orguit zs	070 Plead M	071 Pluka zs
072 PowerStrnJ	073 pulsRay zs	074 Quarp BC	075 RbbrBellBC	076 ReBird M	077 resPad zs	078 Reverse J	079 rmBack zs
080 rngPort zs	081 Roboe zs	082 RuffLea.jh	083 Shifted BC	084 ShineChrdJ	085 shivrPd zs	086 sineZZZ zs	087 sinMorf zs
088 sitar zs	089 Skware zs	090 smoovLd zs	091 SoftBell J	092 Softi J	093 SoftSeq. J	094 sofueMODzs	095 SoSad M
096 SpaceNighJ	097 spasDrv zs	098 Spinner M	099 spoolPd zs	100 sqPadMM zs	101 squar00 zs	102 Sr.Goo M	103 step2it zs
104 Subbass zs	105 Sunday M	106 Tomita J	107 Torque	108 UfO 4 M	109 UKG BC	110 UKG2 BC	111 V-Acid#4 M
112 V-Acid#7 M	113 V_Acid#9 M	114 VCS 3a J	115 videoG1 zs	116 videoG2 zs	117 videoG4 zs	118 waowLd zs	119 Weazel M
120 WetThn zs	121 wire 1 BC	122 Wobble M	123 xPandr zs	124 yahy zs	125 Yeao! M	126 ZartPad J	127 Zupfi J

Patches by Joerg Schaaf (J), Matthew Stolley (M) and Zack Steinkamp (zs)

ROM-K

000 7thHeavnJS	001 Ah RESO JS	002 Anabo|icJS	003 Anima JS	004 Animate JS	005 ArtificlJS	006 Bad S JS	007 Bassic JS
008 Bassta JS	009 BasstardJS	010 BC VoV-2BC	011 BC VoV-3BC	012 Beatbox JS	013 Bella JS	014 BElla 2 JS	015 BellaArpJS
016 BIG FLY JS	017 Birdy JS	018 Braxter JV	019 CalliopeJS	020 Carpets JS	021 ChainsawJS	022 Chant JS	023 Choir 4 BC
024 Cold SawJS	025 ConcreteJS	026 Crispy2 jh	027 Deeper JS	028 Dig Me JS	029 Dig ThisJS	030 Disco OK	031 Donkey JS
032 DreBeat jh	033 Dukbass+BC	034 Dysonia BC	035 EnglArp JS	036 EnoesqueJS	037 FeedyPadJS	038 Feng JuiJS	039 FM Bass JS
040 FM Sequ jh	041 For DeepJS	042 Frozen JS	043 FuzzBellJS	044 Fuzzbox JS	045 FX Drum JS	046 Ghost 2 JS	047 GinaPad JS
048 Glitch OK	049 Goa4 it JS	050 Guitar4 jh	051 HackbartJS	052 HarmonixJS	053 Hauntin'JS	054 Hovis JS	055 Hybrid JS
056 Impact MS	057 Induced JS	058 InfectedJS	059 InfinityJS	060 JaySync JS	061 JunoApg JS	062 Justice JS	063 KyotoLd JS
064 Laville JS	065 Lead JS	066 LoFine jh	067 MajorityJS	068 Mallet JS	069 MonolithJS	070 Moon PadJS	071 MorsSpc JS
072 Moving JS	073 Nasty JS	074 NiceArp JS	075 No Age JS	076 Odyssey JS	077 OldScol OK	078 Opener JS	079 Organic JS
080 Outland JS	081 OverloadJS	082 OvertoneJS	083 Percold JS	084 Piggy JS	085 PluckMe BC	086 PolySin JS	087 Prodigy JS
088 Puls4thsBC	089 Pulsic JV	090 Puncher JS	091 Q-Lead jh	092 Quarx JS	093 Random JS	094 Raw JS	095 Rhy-Arp JS
096 Rough JS	097 ScanJob JS	098 Scary jh	099 SeqIt JS	100 Sim SalaJS	101 Simply JS	102 SinderelJS	103 SineBeezJS
104 SmoothBsBC	105 Soaker JS	106 Soft3rdsBC	107 Soloist JS	108 Start UpJS	109 Subaqua BC	110 Sweeper JS	111 Taurus JS
112 Tight JS	113 Tubez JS	114 Tubular JS	115 Uprite JS	116 V-Birth1 K	117 Vienna JS	118 Virus B JS	119 Voyager JS
120 Wailin JS	121 WalkaArpJS	122 Walker JS	123 Wave-PadJS	124 Waver JS	125 WeeBell jh	126 Whirly JS	127 X-Bellz JS

Patches by Joerg Huettner (jh) and HJ Scheffler (JS)

ROM-L

000 8BitHellXM	001 8-bitPadXM	002 AcidLineXM	003 AllRoundXM	004 AngstPadXM	005 Bass 87 XM	006 BD 3-4 XM	007 Bombast jh
008 BP Pad XM	009 BPGrooveXM	010 BpHpOsc XM	011 CheezArpXM	012 CheezLd XM	013 CheezMasXM	014 ChoBell jh	015 ComeOne XM
016 Cydonia1XM	017 Cydonia2XM	018 DaBrain jh	019 DeepAb XM	020 Detuner XM	021 DigeriduXM	022 DigiGrv XM	023 DigiScrmXM
024 DistArp1XM	025 DistArp2XM	026 DistBassXM	027 DistLd1 XM	028 DistLd2 XM	029 DistortaXM	030 DistRez XM	031 DrunkET XM
032 DrunkSpcXM	033 Du Hast XM	034 EBM Ld1 XM	035 EBM Ld2 XM	036 EBMBass1XM	037 EBMBass2XM	038 Error XM	039 EvilDeadXM
040 EvilLeadXM	041 Feeder XM	042 Front242XM	043 FutureBsXM	044 FuturEP XM	045 GoGrooveXM	046 Groov7thXM	047 HardHousXM
048 HP Bass XM	049 IconArp XM	050 Intense XM	051 IOC 3-4 XM	052 IOC BassXM	053 IOCBass1XM	054 JeanLeadXM	055 JMJ Arp XM
056 Killers XM	057 KraftArpXM	058 LectroLdXM	059 LFOmove jh	060 LoTatar jh	061 Mad LFO XM	062 Mamamia jh	063 Massive XM
064 Mayhem XM	065 Mellow XM	066 MelodiBzXM	067 MelodiTWXM	068 MeloDM XM	069 MeltArp1XM	070 MeltArp2XM	071 MeltBassXM
072 Melter XM	073 MeltGrv XM	074 MeltIntrXM	075 MeltSyn XM	076 MoonArp XM	077 MoonBassXM	078 MoonLeadXM	079 New IOC XM
080 NitzerBsXM	081 NoizBassXM	082 NuSkool jh	083 O My GodXM	084 OffBass XM	085 OffLoop XM	086 Ol'SkoolXM	087 OldLead jh
088 OscilateXM	089 OutThereXM	090 PB AlienXM	091 PhaseLd XM	092 PhasrArpXM	093 PlainBasXM	094 PPG TI jh	095 Pro1-FX XM
096 RatPack jh	097 ResoMeloXM	098 RezArp XM	099 RezPad XM	100 RezStrngXM	101 S9 Loop XM	102 S9GrooveXM	103 S9GrooveXM
104 SawArp XM	105 SawComm XM	106 Scores jh	107 ScrmArp XM	108 ShalloBsXM	109 ShoutLd XM	110 Simul8r XM	111 Sinus9 XM
112 SpaceLabXM	113 SqrArp2 XM	114 SqrArp2 XM	115 SqrBass XM	116 SubBass XM	117 SweetSqrXM	118 SynthPopXM	119 Talker XM
120 TranzArpXM	121 TranzBasXM	122 U F O XM	123 UndawrldXM	124 VocoPad XM	125 WetSqrBsXM	126 XMorphLdXM	127 XMorphLpXM

Patches By Xmorph/Icon Of Coil (XM) and Joerg Huettner (jh)

ROM-M

000 GO ON! MS	001 Lonely MS	002 N-R-G! MS	003 Photex MS	004 1 FingerMS	005 303Sync MS	006 AftrglowMS	007 Alert!! MS
008 AlroundrMS	009 AmbienceMS	010 AmbrStngMS	011 Angels MS	012 Binary MS	013 BombTraxMS	014 BPMover PS	015 BubblizeMS
016 Cabinet MS	017 Careful!MS	018 CataclsmMS	019 CavePizzMS	020 ChainSawMS	021 ChilloutMS	022 ChinaToyMS	023 ChordMe MS
024 Circles MS	025 ClubbingMS	026 ClubSub MS	027 CoolBlipMS	028 Crazy!!!MS	029 CrystalsMS	030 DarksideMS	031 DaydreamMS
032 DialFFM MS	033 DropzoneMS	034 DryLand MS	035 DscotheqMS	036 E-motionMS	037 EuroBassMS	038 EuroSaw MS	039 EuroSaw2MS
040 EuroStngMS	041 EuroSubBMS	042 FatMoogyMS	043 FiltopiaMS	044 FlngomatMS	045 Fltopia2MS	046 Fltopia3MS	047 FM Bass MS
048 FMShaperMS	049 GrgorianMS	050 HackBassMS	051 Hazard MS	052 Heaven MS	053 Hoboken MS	054 HolywoodMS	055 IceDartsMS
056 InfinityMS	057 JP Bass MS	058 KemistryMS	059 KoolSawsMS	060 KraftLd MS	061 KraftLd2MS	062 KrftworxMS	063 LdStrngzMS
064 LoFiVibeMS	065 LostInT.MS	066 Maniac! MS	067 MegaFuzzMS	068 MegaraveMS	069 MegaWattMS	070 ModMnstrMS	071 OffbtDblMS
072 OffshoreMS	073 OldSkoolMS	074 ParadiseMS	075 PartyOn!MS	076 Plastic MS	077 PowerPadMS	078 Public MS	079 Pulsar MS
080 PulsArp MS	081 PunchBssMS	082 PWFatty MS	083 PwrStackMS	084 R-Whip MS	085 RaverLneMS	086 RawBlineMS	087 RckDaClbMS
088 Re-Flex MS	089 Rising MS	090 Rvltn303MS	091 SciFiChrMS	092 Smoothy MS	093 Snapper MS	094 Softie MS	095 SolidGoaMS
096 Spacy303MS	097 SpceBrasMS	098 SpceDustMS	099 SquarDncMS	100 StrburstMS	101 SuprNovaMS	102 SyncStarMS	103 Tachyon MS
104 TekStepzMS	105 TranceFXMS	106 Tri-AnglMS	107 TriShaprMS	108 TrncTipsMS	109 TrnsfrmrMS	110 TubeDstxMS	111 Typhoon MS
112 Typhoon2MS	113 Typhoon3MS	114 U-Punk MS	115 UK'Bass MS	116 UniBass MS	117 V...ger MS	118 Vintage MS	119 VocodrPdMS
120 VowelSwpMH	121 WaveridrMS	122 WhatThe.MS	123 Wicked MS	124 Wraith MS	125 Wraith2 MS	126 X-FlangeMS	127 {TheOne}MS

Patches by Manuel Schleis (MS) and Mikael Hansson (MH)

ROM-N

000 AandreasM@	001 Aerosol J	002 AerSynthM@	003 Al2 Pad M@	004 AirMonixM@	005 Apogee M@	006 AqutouchM@	007 Baggins M@
008 BGot90s M@	009 BigPadSwM@	010 Bowzerz M@	011 Cali-AirM@	012 CheezwizM@	013 Claps2 HS	014 Clench BC	015 CloudCtyM@
016 COMPump M@	017 CrossQ BC	018 D&B FX	019 D&B Geneqa	020 D&B Woover	021 D'EchoerM@	022 DetektorM@	023 DigiKoto M
024 DontFretM@	025 DripDropM@	026 Driven M@	027 EddiWho?M@	028 EPStage?M@	029 EPTines2M@	030 EPWhirlyM@	031 EPZeply M@
032 ETom2002M@	033 Fingers M@	034 FMChittrM@	035 FourSaws	036 FunkLd-1SM	037 FunkLd-2SM	038 FunkLd-3SM	039 FunkLd-4SM
040 GedyLeedM@	041 Gntle9thM@	042 Grander M@	043 GrimeyM@	044 HarmopadM@	045 He-VPlukM@	046 HoldChrdM@	047 HrmadnesM@
048 PadMe|TISV	049 Jetropa M@	050 JunoPowrM@	051 Kompin' M@	052 Korgan M@	053 Kyrie M@	054 Lektrik M@	055 LetsSyncM@
056 LFOdecayMH	057 LuckyMan J	058 CityCat SV	059 MelodieaM@	060 MiniBassSM	061 MiniBS-2SM	062 MiniBS-3SM	063 MiniBS-4SM
064 MiniBS-5SM	065 MiniLeadSM	066 ModsweepM@	067 SawFire SV	068 MS20 HP PS	069 NewSnareBC	070 NewWorldM@	071 NoizBassM@
072 O'Pad M@	073 ObiPad J	074 OceanusM@	075 Oh Yeah M@	076 OhEq-8 M@	077 OrbteriaM@	078 PadLayerM@	079 Paiow M@
080 Pat'sGR M@	081 Pergru M@	082 Perky! M@	083 PhazplukM@	084 Popcomp M@	085 PortaPoly@	086 ProfeticM@	087 PrtaBeloBC
088 Punchit2SV	089 Punsh itSV	090 QMenMW BC	091 Replika M@	092 ResoChrdJS	093 Reveal JS	094 RezTailsM@	095 RichWind
096 RimShot BC	097 Ripper JS	098 Rollin JS	099 Rollups M@	100 Saw-Ya! M@	101 Spaced JS	102 StarPad J	103 Stratus JS
104 SubdvisnM@	105 SunbeamsJS	106 SweePlukM@	107 Synchym2M@	108 SyncPedlM@	109 Tender JS	110 TheramosM@	111 Tight8s M@
112 Tremor JS	113 TronFlt M@	114 TronStr M@	115 TwinPadsM@	116 UofYouthM@	117 VibePad M@	118 VolutionM@	119 Wavelet M@
120 Whales JS	121 WineglasM@	122 WowGrowlM@	123 WynwouldM@	124 X Dream JS	125 X-Men JS	126 XitLeft M@	127 Zyntar M@

Patches by Ben Crosland (BC) HJ Scheffler (JS), Matt Picone (M@) and Shin Murayama (SM)

ROM-O

000 2030SawzSV	001 8-bit SV	002 Acidia SV	003 AlphA SV	004 AlphA IISV	005 AnachronSV	006 Analand SV	007 Angels SV
008 Armus SV	009 AtalashiSV	010 BasStar jh	011 BionicleSV	012 BoomahMgSV	013 Breezer SV	014 C Break SV	015 C cup SV
016 C-Love SV	017 C-Rave SV	018 C-Trek SV	019 Coldtab SV	020 Commers2SV	021 CosmicA SV	022 Cozze SV	023 CybrlifeSV
024 DancnldySV	025 DarkliteSV	026 DarkmoonSV	027 DarktrnzSV	028 Deepest SV	029 Deutsch SV	030 DigipnchSV	031 DigirainSV
032 Digpnch2SV	033 Dirty MgSV	034 DrunksawSV	035 DryThrthSV	036 Dub-seq SV	037 DubstickSV	038 EeriebedSV	039 Fishy C SV
040 FiveCentSV	041 Flash KCSV	042 Flyin' CSV	043 Fm-glassSV	044 FM-stickSV	045 FrancaisSV	046 Funkeys SV	047 FutureMgSV
048 FutureTBSV	049 G&R SV	050 GlstowerSV	051 Goatic 3SV	052 Groggy SV	053 HipclaviSV	054 Hows SV	055 I-saw-aCSV
056 JeePee SV	057 K-rider SV	058 KC & ...SV	059 LegacybsSV	060 MantorokSV	061 Mars SV	062 MatricesSV	063 Metalic SV
064 MingettiSV	065 MinileadSV	066 MinitrnsSV	067 MstrBrn SV	068 My 909snSV	069 Nasal-TBSV	070 NeoworldSV	071 Neurons SV
072 ODC SV	073 Omnipeg SV	074 OrganizeSV	075 Pad-me SV	076 ParadiseSV	077 PearlpadSV	078 ProjectXSV	079 Proto-EPSV
080 Pullbag SV	081 PulslifeSV	082 Punchit3SV	083 PurpleTBSV	084 Q-Games jh	085 RavinmadSV	086 Red sawsSV	087 Redline3SV
088 Redline4SV	089 Ringie SV	090 Shiny SV	091 Smoky303SV	092 SmokyBasSV	093 Spazer SV	094 SunorganSV	095 Swing!C SV
096 SyncomatSV	097 Syntabs SV	098 Taiyoo SV	099 TB-ball SV	100 TB-cat SV	101 TechnoidSV	102 TeeZee SV	103 TimefluxSV
104 TinytrncSV	105 TransqilSV	106 TranziedSV	107 TranzistSV	108 TrippyTBSV	109 TrncslidSV	110 twinkle SV	111 Two keysSV
112 UberheimSV	113 UndernthSV	114 Unusual SV	115 Use Me 1SV	116 V-Claps SV	117 V-Hats SV	118 VA-windzSV	119 Vertigo SV
120 VnGeliseSV	121 Watto! SV	122 Whitebs SV	123 Wildie SV	124 WoodenbsSV	125 Y-music SV	126 Yakujim SV	127 Zeepad SV

Patches By Cosmic Dreamer (SV)

ROM-P

000 !"U"! CC	001 %SOFT% CC	002 2 LFO 2 CC	003 A FreeK CC	004 ADN CC	005 AfterpadCC	006 Alamos CC	007 AmiGito CC
008 AussieLdCC	009 B-Boys CC	010 BallenasCC	011 Bandrun CC	012 Bass!!! CC	013 BigArp CC	014 BigBass2CC	015 BudapestCC
016 C4Phone CC	017 Ciko CC	018 Cinema1 CC	019 Cinema2 CC	020 Circus CC	021 CrystalsMH	022 D50MorphCC	023 DCLead CC
024 Zooz SV	025 DiganOB CC	026 Diosa CC	027 DukaliopCC	028 Duke5 CC	029 DX 100 CC	030 DX ThickCC	031 Early80sMH
032 EarthLd CC	033 Entropy MH	034 Stagga SV	035 Eyyy CC	036 Falling1CC	037 FanKWrldCC	038 ChrysPadSV	039 Fiona MH
040 Flower CC	041 Flys CC	042 FM Perc CC	043 Fm&Mod CC	044 FM&MOD2 CC	045 FM)MW CC	046 FreakMinCC	047 Garfisa CC
048 Gargara CC	049 Genssis CC	050 Hancock CC	051 Hohner CC	052 HollowBsPS	053 HongKongCC	054 Plux0r SV	055 JDLead CC
056 JoeZ Vc CC	057 Joni M. CC	058 JPEight PS	059 KeratArpCC	060 L.Mays1 CC	061 L.Mays2 CC	062 LamaLeadCC	063 LAVirginCC
064 Lullaby CC	065 MadrePadCC	066 MamasGunCC	067 Mapa CC	068 Marbles CC	069 Mercado CC	070 MeShell2CC	071 MgBass1 CC
072 MgStereoCC	073 MINI-M++CC	074 MiniExp CC	075 Moderno CC	076 Montero CC	077 MS HammrCC	078 Mth Sky CC	079 MW SeqG CC
080 N N 1 CC	081 NewLeadQCC	082 NuWaveLdCC	083 O Pitch CC	084 O Pitch2CC	085 OB 10 CC	086 OB 8 CC	087 OB Neee CC
088 OB Tero CC	089 OBeeBee CC	090 OBrass CC	091 Open P5 CC	092 Osc3 CC	093 OuBeeStrCC	094 Pad S&H CC	095 PeacePd CC
096 People1 CC	097 People2 CC	098 PhaseMW CC	099 PhasEns CC	100 PPGCruelCC	101 PPGWavesCC	102 Remark CC	103 Rosario CC
104 S&HSeq2 CC	105 Scared CC	106 SeqAlienCC	107 SineBudaCC	108 Spain2 CC	109 SQRSolo CC	110 StrAbejaCC	111 StrAlterCC
112 SubBass CC	113 Sweep CC	114 SweepichCC	115 TalkPad CC	116 Transas CC	117 UFO 33 CC	118 UMBbass CC	119 VeryFar CC
120 Vi-bass+CC	121 WaitingRCC	122 Wakeman CC	123 WakMoogyCC	124 WaveSeq CC	125 WavetronCC	126 XXI CC	127 Zen CC

Patches by Claudio Cardone (CC), Cosmic Dreamer (SV) and Peter Schelfhout (PS)

ROM-Q

000 AccMW JL	001 AgressivJL	002 AhaaDistJL	003 Amadeus PS	004 Anthem PS	005 ArpBass JL	006 ArpBass2JL	007 ArpSwingPS
008 ArtifactJL	009 AstralPdJL	010 BeautiflJL	011 Benny B JL	012 BigBoy JL	013 Birds JL	014 Block JL	015 Bone JL
016 Boring JL	017 Bulk JL	018 Century PS	019 Chant JL	020 Chord ! PS	021 Chunky JL	022 ColdStelJL	023 ComMan JL
024 CupDrum JL	025 DeepSwllJL	026 DefectedJL	027 Dirty L jh	028 Dizzy JL	029 DoomBellJL	030 DubBass jh	031 Elastic JL
032 ElecBas JL	033 FakeGtr JL	034 FakeSax JL	035 Feeder JL	036 FelxDmstJL	037 FftyFftyJL	038 Fretles JL	039 FromBgn JL
040 Fusion JL	041 Gimme5 JL	042 GrittyB JL	043 Grose JL	044 Guitar JL	045 Heaven JL	046 Hoedown JL	047 Hoho. JL
048 Hollow JL	049 HolyVrs JL	050 HonkHonkJL	051 Horny JL	052 Horror JL	053 HP SauceJL	054 ImFrenchJL	055 Jeruslm JL
056 Juho L'sJL	057 KarnEvl JL	058 KE9Lead JL	059 KickO' JL	060 KnockersJL	061 Matter JL	062 MntnFlutJL	063 Monsta jh
064 Moogish JL	065 MorpheusJL	066 MrKitinaJL	067 Mystic JL	068 NaukuMstJL	069 NghtTme JL	070 NiceBassJL	071 NintendoJL
072 Nokia JL	073 NotNice jh	074 NotPad JL	075 NotPad2 JL	076 OfcHell JL	077 Pad 4AD XM	078 Padman JL	079 PawnBassJL
080 Positiv JL	081 PythagorJL	082 Quantum JL	083 RndAgresJL	084 Rotary JL	085 Satt 2! jh	086 Sheva JL	087 Shivers JL
088 Sick JL	089 Singing JL	090 SinisterJL	091 Sitar JL	092 Slicey JL	093 SlicyBasJL	094 SoulEatrJL	095 SpcMonkyJL
096 Spirits JL	097 SpIddVOCJL	098 SplitPhtJL	099 SqrMdns JL	100 SqrSwlw JL	101 Squba JL	102 Sub JL	103 Super JL
104 SurfMstrJL	105 SwirlPadJL	106 SyncSyncJL	107 SynthPnoJL	108 Tarkus JL	109 Tarkus2 JL	110 Tch&Go JL	111 The Val.jh
112 TheDawn JL	113 TheWell JL	114 ThickSawJL	115 Trilogy JL	116 TrilStr JL	117 Vacuum JL	118 VilePad JL	119 Voyager JL
120 Vry'eavyJL	121 Warble JL	122 WarmPad JL	123 Warped JL	124 WarpHov JL	125 WideBassJL	126 WoodenMnJL	127 Zaphod JL

Patches by Juho Lepisto (JL)

10: Index

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Index of Functions etc.

> A

Amount 80
Amplifier 21
Analog Boost 42, 96
Arp Section 40
Arpeggiator 40, 76
Assign 39, 85, 87
Attack 21
Audio Clock 159
Audition 45, 127

> B

Balance 35, 112, 114
Band Pass 25
Band Stop 26
Bank 14, 127, 166
Bit Reducer 28
Boost 158
BPM 127

> C

Carrier 100
Category 13, 127, 134
Channel 152
Chorus 42, 97
Classic Oscillators 110, 115, 120
Cleaning 9
Clock 82, 90
Color 124
Coloration 93
Common 121, 144
Configuration 15, 44, 125
Contour 83
Cutoff 24, 25, 86, 139
Cutoff Link 27

> D

Damping 89, 93
Decay 21
Delay 41
Delay Time 90
Density 47, 112
Destination 79, 80
Destinations 39
Detune 30, 31, 33, 109, 167
Distortion 42, 95
Dump 154

> E

Edit Buttons 13
Effects Section 41
Envelope Amount 25
Envelope Mode 81, 83
EQ 41, 89, 93
Exit button 14

www.americanmusical.com

> F

Fade In 87
FCC Information 172
Feedback 42, 89, 91, 93
FiltEnv>Hsync 123
Filter 24, 139
Filter Balance 25, 139
Filter Envelope 29
Filter Gain 85
FM 33, 110
FM Amount 86
FM Mode 116

> G

Gain 94
Global Channel 152
Glossary 177

> H

High Key 168
High Pass 25
Hold 76
Hold Pedal 156, 169
HyperSaw 47, 112, 117
HyperSync Offset 123

> I

INIT Programs 17
Initial Phase 121
Input 106
Input Follower 105
Input Modes 100
Inputs 133

> K

Key Follow 26, 84, 112, 114, 139
Key Mode 122
Keyboard 155, 168, 169

> L

LED 161
LFO 37
LFO Contour 81
Local On 155
Low Key 168
Low Pass 25

> M

Master Section 44, 125
Matrix Section 39
Memory Protect 162
Menus 13
MIDI 152
MIDI Channel 167
MIDI Clock 153
MIDI controller 15
MIDI Device ID 153
Mix 137
Mix Section 35

www.americanmusical.com

Mod Wheel 156
Modulation Matrix 79
Modulator 100
Modulators 81
Modulators Section 37
Mono 32, 110
Multi 44, 45, 127
Multi Edit 125
Multi mode 14

> N
Noise 124
Note Length 77

> O
Octaves 77
Osc Volume 122
Oscillator 32
Oscillator Shape 30
Oscillator Sync 32
Oscillators 107
Oscillators Section 30
Output 167

> P
Panic Button 110
Panorama 36, 87, 129
Parallel 4 27
Part 45, 127
Part Enable 166
Parts 14
Patch 14, 166
Patch Name 136
Patch Volume 22
Phaser 42, 98
Pitch 84
Pitch Bender 130
Portamento 34, 109, 122
Power On/Off 126
Predelay 93
Program 127, 167
Program Change 153, 169
Pulse Width 31, 85, 109
Punch 122

> Q
Q-Factor 42, 89

> R
Random 44, 126
Random Patch Generator 152
Rate 81, 82
Rate Reducer 28
Rate+Follow 28
Rear Panel 10
Receive Dump 154
Rectifier 28
Redo 45, 126
Release 22
Remote Mode 15, 125, 162

www.americanmusical.com

Repair 9
Replacing the Battery 10
Resolution 77
Resonance 24, 26, 85, 139
Reverb 41, 91
Reverb Type 92
Ring Modulator 36, 106, 124
Rotating the sockets 11
Routing 27

> S
Saturation 27, 140
Search 45
Search Button 126
Select Filter 25
Selecting Programs 12
Semitone 31, 114
Semitones 109
Send 90
Sequencer Mode 15, 46, 128
Serial 4 27
Serial 6 27
Setting Up 11
Shape 37, 81, 82, 86, 108
Shift Button 126
Single 45, 128
Single mode 14
Slot 79
Smooth Mode 129
Soft Knob 135, 159
Soft Thru 153
Source 79
Split Mode 27
Spread 47, 112
Store 125, 136
Sub Oscillator 123
Surround 134
Sustain 21
Sustain Slope 22
Swing Factor 77
Switching On 12
Sync 32, 110
Sync Offset 123
System Settings 161

> T
Tap Button 44, 125
Tempo 23, 129
Time 92
Total Integration 8
Transmit Dump 155
Transpose 126, 129, 156, 167
Trigger Phase 83
Tuning 160

> U
Undo 45, 126
Unison 33, 109, 131

www.americanmusical.com

> V

Value Knobs 127
Velocity 132
VirusControl 8, 15, 40, 49
Vocoder 100
Volume 35, 129

> W

Warranty 175
Wave Select 31, 109
Wave Shaper 28
Wave Table 47, 114
WaveTable 47, 114, 118
Wavetable Index 47, 114

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